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TO BRING YOU THESE PRODUCTION CHANGES IT HAS BEEN NECESSARY TO OMIT THE PHOTOFACT SERVICER IN THIS SET OF FOLDERS.

--------WATCH FOR THE NEXT PHOTOFACT SERVICER IN SET 128-------

PRODUCTION CHANGES
BULLETIN 15

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER #2 - SET #117

ADMIRAL CHASSIS 20T1, 20V1 & RADIO Ch. 3C1

Production Changes on Admiral Chassis 20T1 and 20V1 include additional of color converter socket, use of PM focusing device, substitution of tubes, and change of component parts.

If V1 tube is a 6CB6, there is no connection between pins 2 and 7.

Capacitor C6 value changed to 3 - 9 MMF.

Capacitor C5 removed.

Resistor R21 changed to 47Ω.

Resistor R25 changed to 68Ω.

Tubes V4 and V5 may be type 6AG5 in some sets. Pin 2 not grounded when 6AG5 tubes are used.

Tube V10 may be 6SQ7 or 6SQ7GT in some sets.

Tube V12 changed to 6SN7GT in some sets.

When tube V5 is changed to a 6AG5, a tube shield is required, and an 18KΩ resistor is added from pin 1 to ground.

Resistor R10 is changed to 1.2megohm in some sets. In later models R10 is omitted when 6AG5 tube is used in IF stage.

Resistor R85 is omitted in some sets.

Tube V14 is changed to 6SN7GT in some receivers.

In some sets a permanent magnet type focusing assembly is used. There are three alternate types used : Part Numbers 94C33-1, 94C33-2, or 94C33-3. They are electrically and physically interchangeable. Component parts eliminated from the B+ filter network when using the PM focusing device are: the focus coil, focus control, and resistor R88. These are replaced by a single 250Ω - 10 Watt resistor- See partial schematic. The low side of resistor R82 is removed from the junction of M2, T3, and C66 and is reconnected to the junction of C66 and pin 3 of the deflection yoke.

Later production receivers have a nine pin socket added to the rear apron of the TV Chassis to provide B+ voltages and 117 Volts AC for attachment of a color converter unit - See partial schematic. A plug with jumper connections fits into this color adapter socket to complete the B+ circuits when a color converter is not being used.

In Radio Chassis 3C1, capacitor C71 is changed to .1 Mfd.

The connection from switch M7 to the converter tube is removed from pin 1 and is connected to pin 7 of V21.

(CONTINUED ON REVERSE SIDE)

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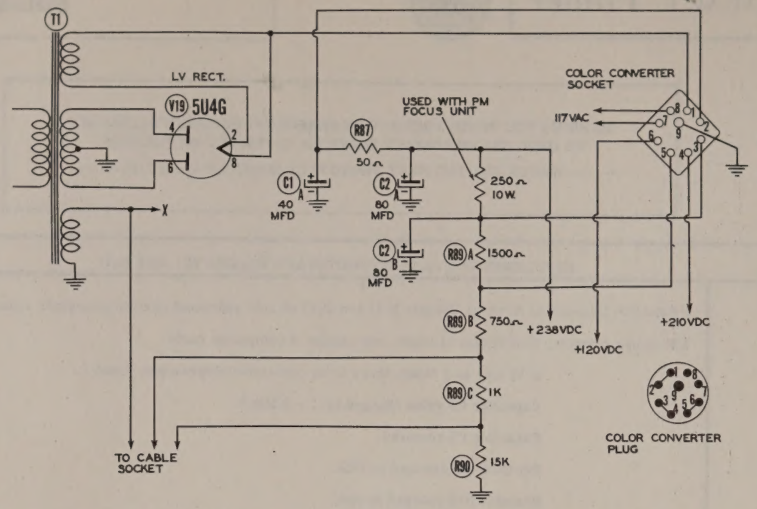

PARTIAL SCHEMATIC SHOWING ADDITION OF COLOR ATTACHMENT SOCKET ALSO CHANGE IN FOCUS CIRCUIT TO ACCOMMODATE PM FOCUS UNIT

BENDIX MODELS
2051, 2060, 2071, 3051,
6001, 6003, 6100, 7001

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER #3 - SET #111

Bendix Models 2051, 2060, 3051, 6001, 6003, and 6100 were covered in Photofact Folder 3 - Set 111. Models 2070 and 7001 have been added to this list and are identical to them except for the following component and circuit changes:

The focus coil changed to stock number LCOF06

A 1.5 megohm resistor added from the grid of V8 to ground.

A 1.5 megohm resistor added from the grid of V8 to +320 VDC.

A 220KΩ resistor added from pin 9 of V7 to +320VDC.

A .05Mfd coupling capacitor added from pin 9 of V7 to pin 2 of V8.

In code "G" and subsequent chassis the 6T8 is replaced by a 6AL5 ratio detector, and either a 6AQ6, 6AV6, or 6AT6 AF Amp.

Some sets have a 6AG5 for the Sync Limiter and DC Restorer, and a 6AG5 or 6BC5 for the 2nd Video IF Amp.

Some sets use a 19T8 as the ratio detector and AF Amp. When this tube is in the circuit, a new power transformer is used (Part No. NH265085-1)

RAYTHEON MODELS
C-1602 (Ch. 16AX22, 25, 26)
C-1602 Series C (Ch. 16AX29)

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 14 - SET #99

Raytheon Model C-1602 Series "C" television receiver is identical to Model C-1602 (Chassis 16AX23, 16AX25, and 16AX26) except that a continuous type tuner is used in place of a detent type tuner. Also AGC is applied to the continuous tuner which requires changes in the AGC circuit. Changes in the AGC circuit are as follows:

Capacitor C60 is removed.

Capacitor C3 is changed to 10MFD @ 50Volts.

Resistor R48 is removed.

A 68KΩ resistor is connected from the AGC terminal on the tuner to the junction of C3 and R47, and a 33KΩ resistor is connected from the AGC terminal to ground.

When the continuous type tuner is used, the model is designated as C-1602 series "C" and the Chassis Number is changed to 16AX29.

For a schematic of this continuous type tuner, see Raytheon Model C-1401 (Chassis 14AX21) in Photofact Folder 12 - Set 123.

SENTINEL MODELS
412, 413, 414, 415, 421, 422,
1U421 AND 1U422 (SERIES YA)

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 11 - SET 100

The following is a list of production changes made on Sentinel Models 412, 413, 414, 415, and the new model designations 421, 422, 1U421 (Series YA), and 1U422 (Series YA):

Resistor R43 removed from ground.

Resistor R76 removed from ground.

Pin 2 of V9 removed from ground.

The low side of R76 is connected to pin 2 of V9 and to the low side of R43.

A 150Ω resistor added from the low side of R43 to ground.

PRODUCTION CHANGES
BULLETIN 16

PRODUCTION CHANGES
BULLETIN 16

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AIRCASTLE
MODELS 150, 153

AIRCASTLE
MODELS 150, 153

AIRCASTLE MODEL 153

TRADE NAME	Aircastle, Models 150, 153
SUPPLIER	Spiegel Inc., 1061 West 35 St., Chicago (9), Illinois
TYPE SET	AC Operated Radio-Phonograph Combination Superheterodyne Receiver With Loop Antenna
TUBES (SEVEN)	Types 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 12AT6 Phase Inv., (2) 50C5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .37 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set the left hand edge of the pointer carriage 2 inches to the right of the left hand end of the metal backplate.

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output	"	A6	"

FOR SERVICE INFORMATION ON RECORD CHANGER FOR MODEL 150 SEE CRESCENT MODEL 350 SERIES IN PHOTOFACT SET 80 FOLDER 3 OR RECORD CHANGER MANUAL CM-2.
FOR SERVICE INFORMATION ON RECORD CHANGER FOR MODEL 153 SEE V-M MODEL 950 IN PHOTOFACT SET 107 FOLDER 13 OR RECORD CHANGER MANUAL CM-3.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Phase Inv.	12AT6	12AT6	7BT	
V5	Power Output	50C5	50C5	7CV	
V6	Power Output	50C5	50C5	7CV	
V7	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	8C-190	PRS150/40-40		EDL4415		TVA-2445	Filter Red
B	40	150							Filter Red
C2	5	500		1468-000005	TCZ-4.7	5W5V5	GP1K-5	MS-55	Ext. Ant. Coupling
C3	.1	200	C8P-101	P288-1	DF-104	PTE4P1		2TM-P1	AVC Filter
C4	.01	400	8G-180	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Audio Coupling ‡
C5	.002	600	C8P-102	P688-002	D6-202	PTE6D2	GP2M-002	6TM-D2	Tone Comp.
C6A	250		† 65A-407	SI250	D6-251	5W5T25	GP2K-250	19C13	AF Amp. Plate
B	5000			BPD-005	DD-502	PTE6D5	811-005	29C1	Audio Coupling
C7	.005	600	C8P-102	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Audio Coupling
C8A	250		* 65A-407	SI250	D6-251	5W5T25	GP2K-250	19C13	Phase Inv. Plate
B	5000			BPD-005	DD-502	PTE6D5	811-005	29C1	Audio Coupling
C9	.05	400	8C-536	P488-05	DF-503	PTE4S5		72P51	Line Isolation
C10	.1	400	8P-101	P488-1	DF-104	PTE4P1		4TM-P1	Line Filter
C11	15				TCZ-15		NPOK-15	19C5	Fixed Trimmer §

‡ Some models use .005MFD in this application.
† Items C6A, C6B, R7A and R7B are combined into one unit.
* Items C8A, C8B, R10A and R10B are combined into one unit.
§ Not used in all models.

CONTROLS

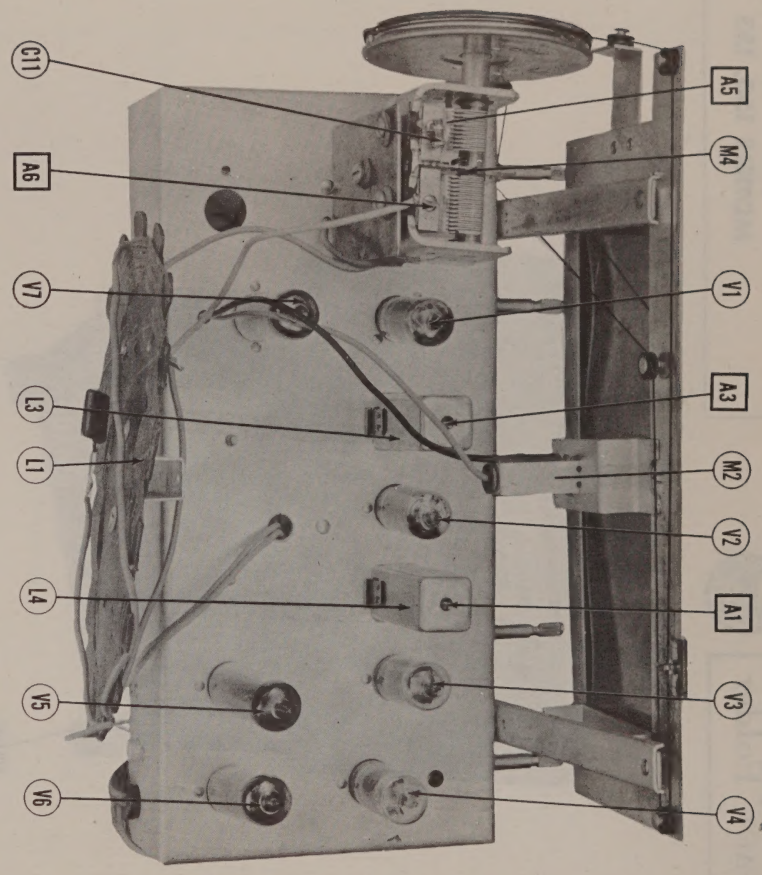
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	10A-408	Q13-137	AM-63-Z	BSK-60-S	Volume Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R1A Per Instructions
C	Switch		Not req.	76-1	SW-A	Not req.	Attach to R1A Per Instructions
R2A	500KΩ	½	10B-409	Q13-133	AM-60-Z	BSK-60	Tone Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R2A Per Instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R3	22KΩ	½			Osc. Grid
R4	1Meg	½		BTS-1Meg	AGC Network
R5	47KΩ	½		BTS-47K	Diode Filter
R6	8.2Meg	½		BTS-8.2Meg	AF Amp. Grid - See Note 1
R7A	500KΩ	½	†		AF Amp. Plate
B	500KΩ	½			Output Grid
R8	220KΩ	½		BTS-220K	Voltage Divider
R9	8.2Meg	½		BTS-8.2Meg	Phase Inv. Grid - See Note 1
R10A	500KΩ	½	*		Phase Inv. Plate
B	500KΩ	½			Output Grid
R11	150Ω	1		BTA-150	Output Cathode - See Note 3
R12	2200Ω	1		BTA-2200	Filter
R13	220KΩ	½		BTS-220K	Isolation
R14	10Ω	½			Rectifier Ballast - See Note 2
R15	400Ω	10		1 3/4 A-400	Filament Dropping - Wire Wound

† Items C6A, C6B, R7A and R7B are combined into one unit.
* Items C8A, C8B, R10A and R10B are combined into one unit.
Note 1. Some models use 6.8Meg resistor in this application.
Note 2. Some models use 15Ω resistor in this application.
Note 3. Some models use parallel resistors in this application to obtain desired value.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	4KΩ CT	4Ω	240Ω CT	.5Ω	12B401	A-3856	A-2900 ①	R0-301 ①	① Drill new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRCASTLE PART No.	VIKING PART No.	QUAM PART No.	
	FIELD	V.C. IMP.				
SP1	PM	4Ω		10J12	10A4A	
	CONE DIA.	V.C. DIA.				
SP2	9 1/4"	1"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIRCASTLE PART No.	MEISSNER PART No.	
L1	Loop Antenna	1.9Ω		13E-397		
L2	Osc. Coil	5.5Ω		13D-400		Tap at .7Ω
L3	1st IF	14Ω	14Ω	13A-398		
L4	2nd IF	12Ω	12Ω	13A-399		

PHONO CARTRIDGE and NEEDLE

ITEM No.	AIRCASTLE PART No.	REPLACEMENT DATA						REMARKS
		ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		LT3-M	T	W60B	A62A	32	0-3 or S-3	Used in Model 150
M1		ACD-J	A-1 A-3	W22AB	A62A A65MG	96	0-3 or S-3 and 0-1 or S-1	Used in Model 153

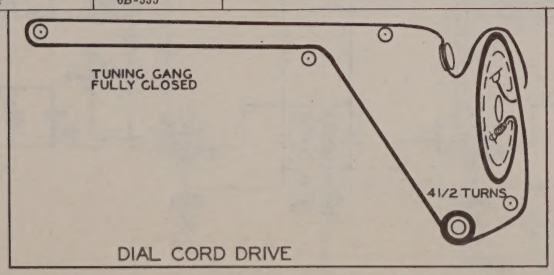
ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AIRCASTLE PART No.		
M2	Bayonet	6-8	.15		Brown		Type #47

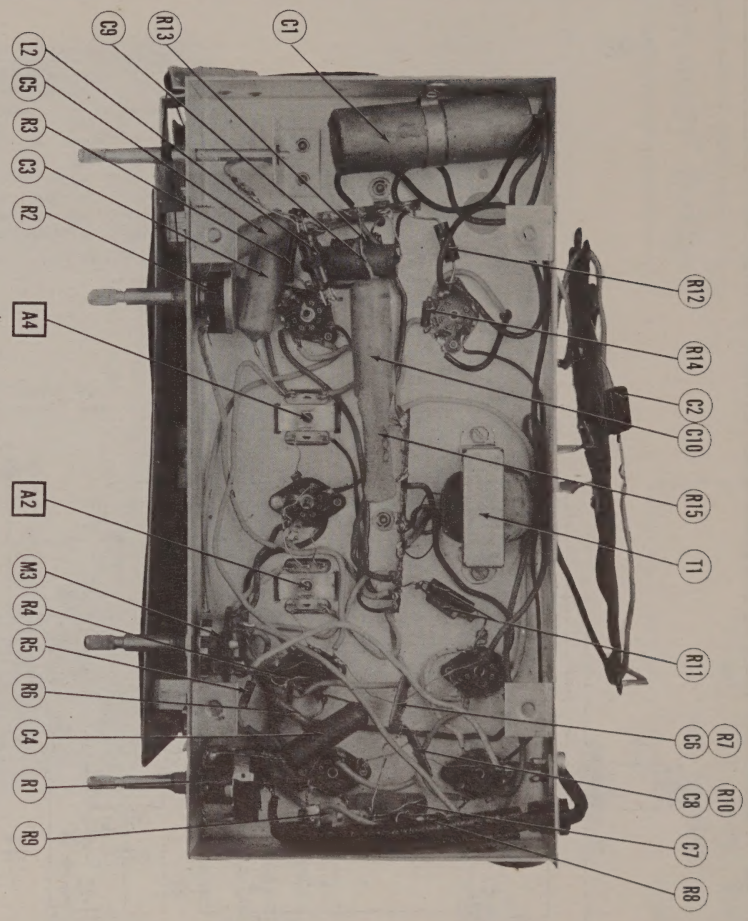
MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
M3	Switch	20B-410	Radio-Phono
M4	2 Gang Var. Cap	8A-411	(33-477MMF, 16-196MMF)
	Dial Pointer	6B-535	

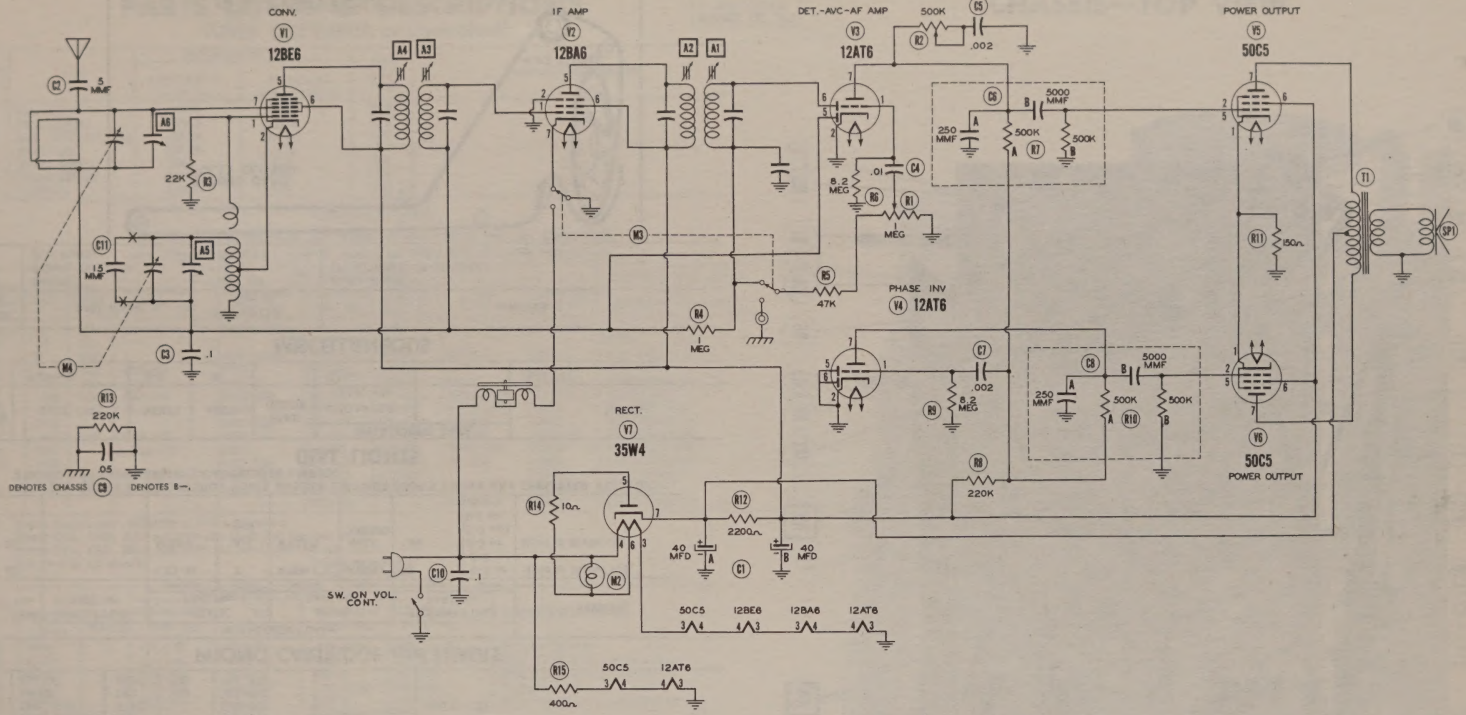


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



AIRCASTLE MODEL 150, 153



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	§-6.5VDC	0V.	23VAC	35VAC	70VDC	70VDC	-.5VDC
V 2	12BA6	-.5VDC	0V.	24VAC	12VAC	70VDC	70VDC	0V.
V 3	12AT6	-.4VDC	0V.	0V.	12VAC	-.5VDC	-.5VDC	28VDC
V 4	12AT6	-.6VDC	0V.	0V.	12VAC	0V.	0V.	22VDC
V 5	50C5	6.4VDC	0V.	60VAC	12VAC	0V.	70VDC	110VDC
V 6	50C5	6.4VDC	0V.	85VAC	35VAC	0V.	70VDC	110VDC
V 7	35W4	0V.	0V.	85VAC	117VAC	105VAC	110VAC	115VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.7Ω	25Ω	37Ω	†2.2KΩ	†2.2KΩ	2 Meg.
V 2	12BA6	2 Meg.	0Ω	25Ω	13Ω	†2.2KΩ	†2.2KΩ	0Ω
V 3	12AT6	16 Meg.	0Ω	0Ω	13Ω	2 Meg.	1 Meg.	†720KΩ
V 4	12AT6	8.2 Meg.	0Ω	0Ω	13Ω	0Ω	0Ω	†720KΩ
V 5	50C5	150Ω	500KΩ	65Ω	13Ω	500KΩ	†2.2KΩ	†120Ω
V 6	50C5	150Ω	500KΩ	80Ω	37Ω	500KΩ	†2.2KΩ	†120Ω
V 7	35W4	Inf.	Inf.	80Ω	100Ω	110Ω	95Ω	85KΩ

§ TAKEN WITH VACUUM TUBE VOLTMETER. RADIO-PHONO SWITCH IN "RADIO" POSITION. † MEASURED FROM PIN 7 OF V7.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

ARVIN MODELS
2160, 2161, 2162, 2164
(CH. TE-290)

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MODEL 2161

ARVIN MODELS
2160, 2161, 2162, 2164
(CH. TE-290)

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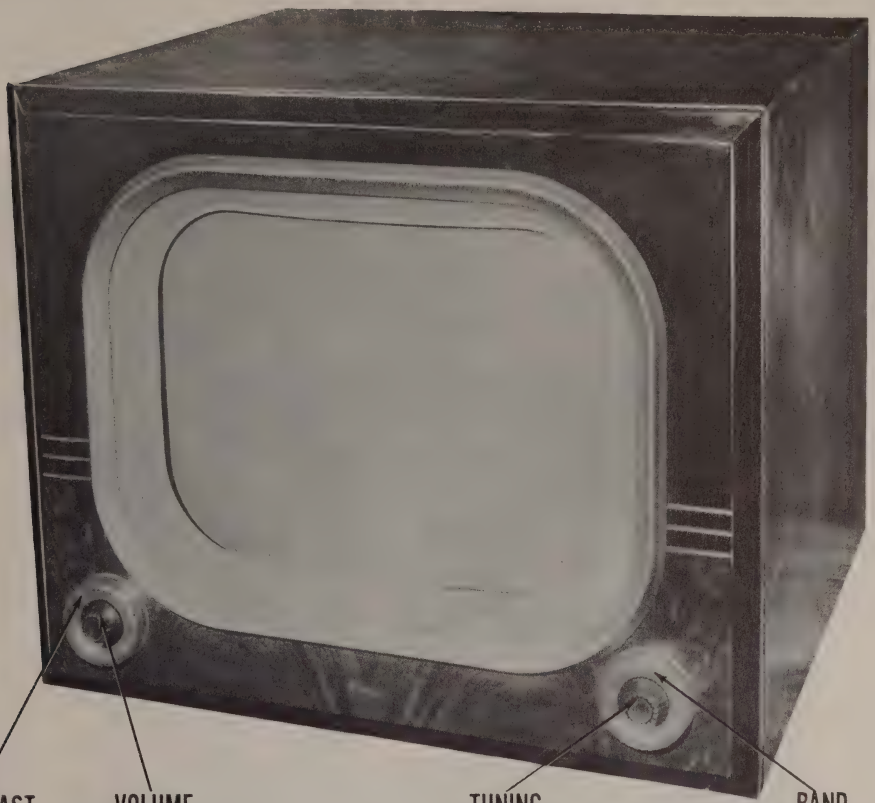
Date 3/51 Set No. 126—Folder No. 3



ARVIN MODELS 2160, 2161, 2162, 2164 (Ch. TE-290)

ARVIN MODEL 2161

TRADE NAME	Arvin, Models 2160, 2161, 2162, 2164 (Ch. TE-290)
MANUFACTURER	Arvin Industries, Columbus, Indiana
TYPE SET	Television Receiver
TUBES	Twenty
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	1.8 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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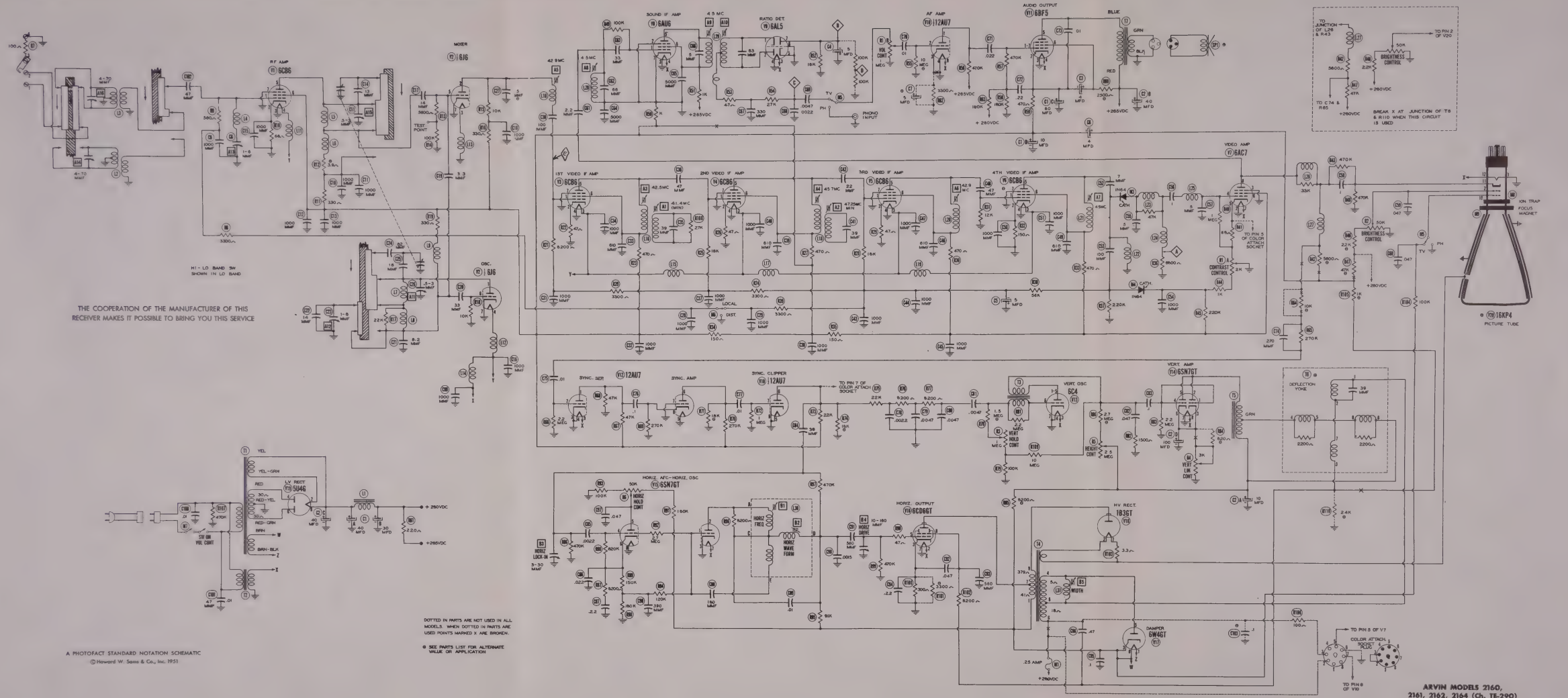
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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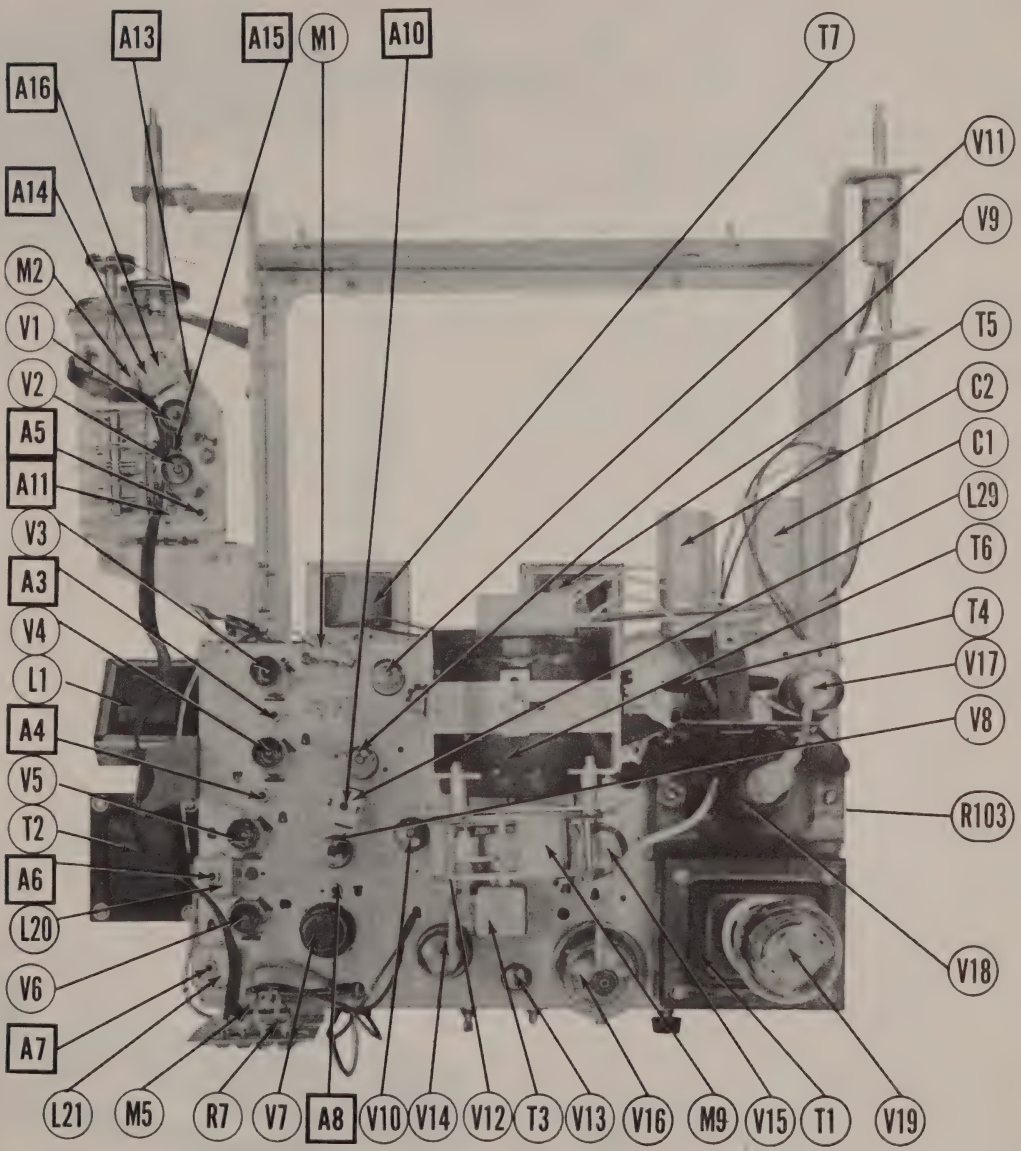
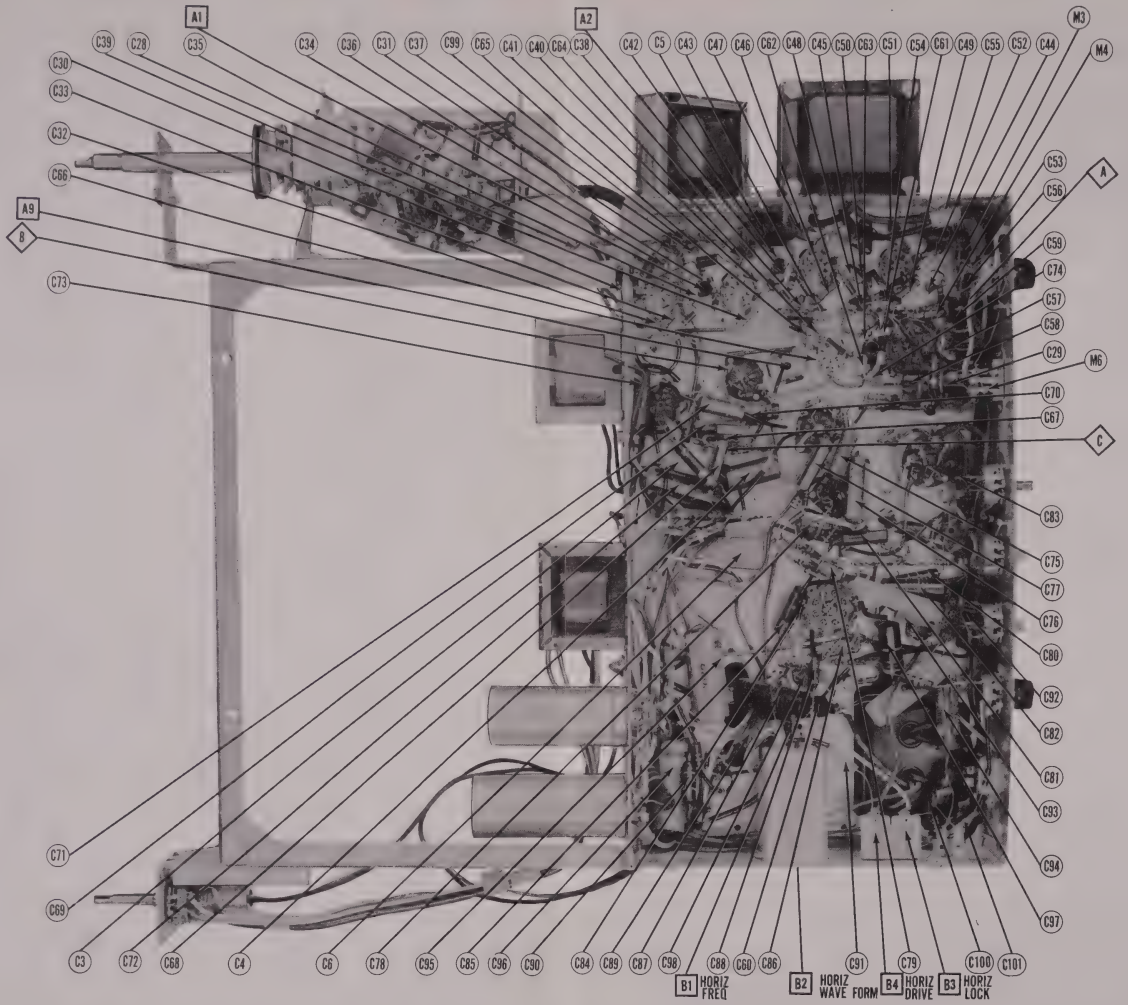
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
ARVIN MODELS 2160, 2161, 2162, 2164 (Ch. TE-290)

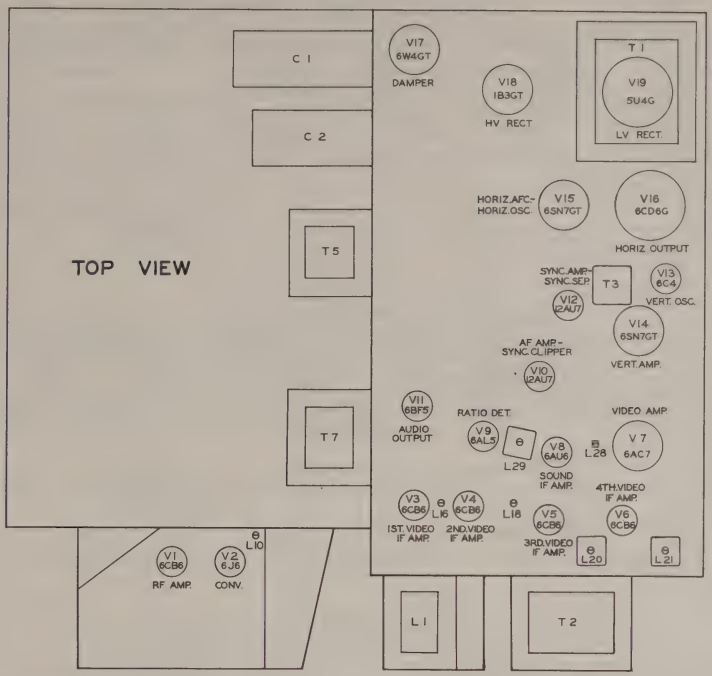
ARVIN MODELS 2160, 2161, 2162, 2164 (Ch. TE-290)

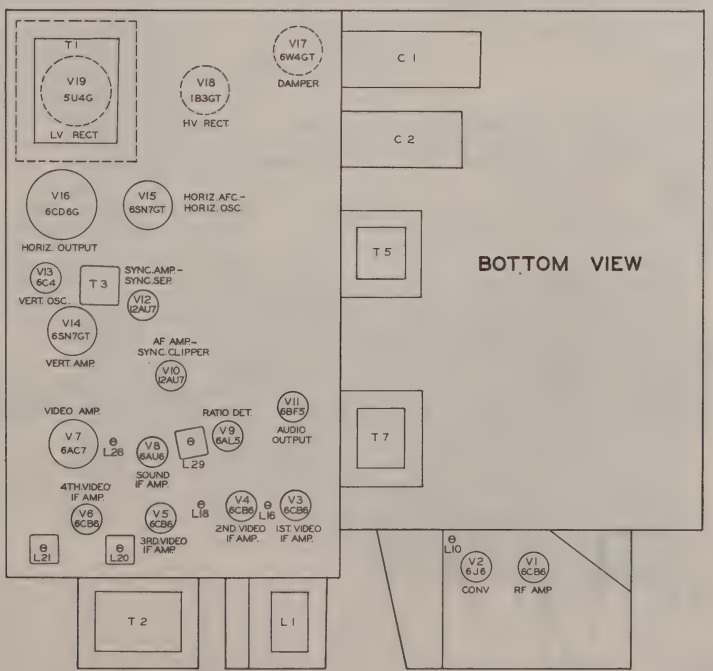


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V15) from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications. Connect the negative lead of a 3 volt battery to the junction of R38 and C5, connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	41.4MC (Unmod.)	Any	DC probe to Point (A). Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	"	"	47.25MC	"	"	A2	"
3.	"	"	42.5MC	"	"	A3	Adjust for maximum deflection. Attenuate signal generator to maintain 2 volt reading.
4.	"	"	45.75MC	"	"	A4	"
5.	"	"	42.9MC	"	"	A5, A6	"
6.	"	"	45.0MC	"	"	A7	"

OVERALL VIDEO IF RESPONSE CHECK

Connect a 27KΩ isolating resistor in series with the oscilloscope vertical input, and a 250MMF capacitor across the vertical input terminals. Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	45MC (10MC SWP)	41.4MC 42.75MC 45.75MC 47.25MC	Any	Vert. amp. thru 27KΩ to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A6 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from Point B to chassis. The junction of these two resistors is alignment Point D as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to pin 4 (grid) of 6AC7 (V7). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (B). Common to chassis.	A8, A9	Adjust for maximum deflection.
9.	"	"	"	"	DC probe to Point (C). Common to Point (D).	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.01MFD	High side to pin 4 (grid) of 6AC7 (V7). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point (B). Low side to chassis.	A8, A9	Disconnect stabilizer capacitor C4. Adjust for maximum amplitude and symmetry as per figure 2.
9.	"	"	"	"	"	Vert. amp. to Point (C). Low side to chassis.	A10	Reconnect capacitor C4: Adjust A10 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

HIGH BAND OSCILLATOR ALIGNMENT

Turn the band switch to "high band" (counter-clockwise). Remove the dummy converter tube and replace the original 6J6 in its socket. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	258.5MC (Unmod.)	Tuning gang fully open.	Vert. amp. to Point (E). Low side to chassis.	A 11	Adjust for zer beat indication on scope. This will be indicated by a narrow trace between two wide traces.
11.	"	"	Approx. 219.5MC	Tuning gang fully closed.	"	L7	Vary generator frequency until zero beat occurs. If zero beat occurs above 219.5MC compress L7 turns slightly. If zero beat occurs below 219.5MC expand L7 turns slightly. Repeat steps 10 and 11 until high band oscillator cover exactly 219.5MC to 258.5MC.

LOW BAND OSCILLATOR ALIGNMENT

Turn the band switch to "low band" (clockwise).

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	130.5MC (Unmod.)	Tuning gang fully open.	Vert. amp. to Point (E). Low side to chassis.	A12	Adjust for zero beat on scope.
13.	"	"	Approx. 99MC	Tuning gang fully closed.	"	L8	Vary generator frequency for zero beat. If zero beat occurs below 99MC spread L8 turns slightly. If zero beat occurs above 99MC compress L8 turns slightly. Repeat steps 12 and 13 until low band oscillator covers exactly 99MC to 130.5MC.

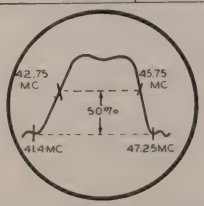


FIG. 1

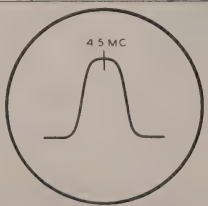


FIG. 2

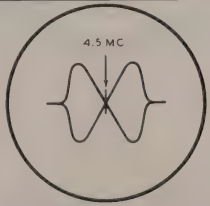


FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

IF TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
14.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	44MC (Unmod.)	Any	DC probe to Point A. Common to chassis.	A13	Adjust for MINIMUM deflection.

HIGH BAND RF ALIGNMENT

Turn the band switch to "high band" (counter-clockwise).

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
15.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	201MC (10MC SWP)	42.75MC 45.75MC	11	Vert. amp. to Point A. Low side to chassis.	A14, A15	Adjust for maximum amplitude of response curve. If peaks can not be made even, re-check video IF alignment. For this step peaks must be even as shown in step 4.
16.	"	"	213MC (10MC SWP)	"	13	"		Check the response curve on all high channels. If the response curve on any channel fails to fall within the limits shown in figures 4A and 4B, expand or compress turns of L5 and repeat steps 15 and 16 until all high band channels fall within the proper limits.

LOW BAND RF ALIGNMENT

Turn the band switch to "low band" (clockwise).

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
17.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	79MC (10MC SWP)	42.75MC 45.75MC	5	Vert. amp. to Point A. Low side to chassis.	A16, L6	Adjust A16 and turns of L6 for maximum amplitude of response curve.
18.	"	"	85MC (10MC SWP)	"	6	"		Check to see that all low band channels fall within the limits of figure 4A and 4B.
			69MC (10MC SWP)		4			
			63MC (10MC SWP)		3			
			57MC (10MC SWP)		2			

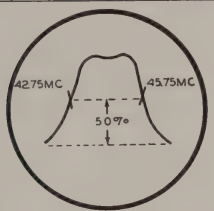


FIG.4

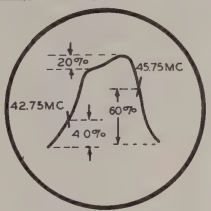
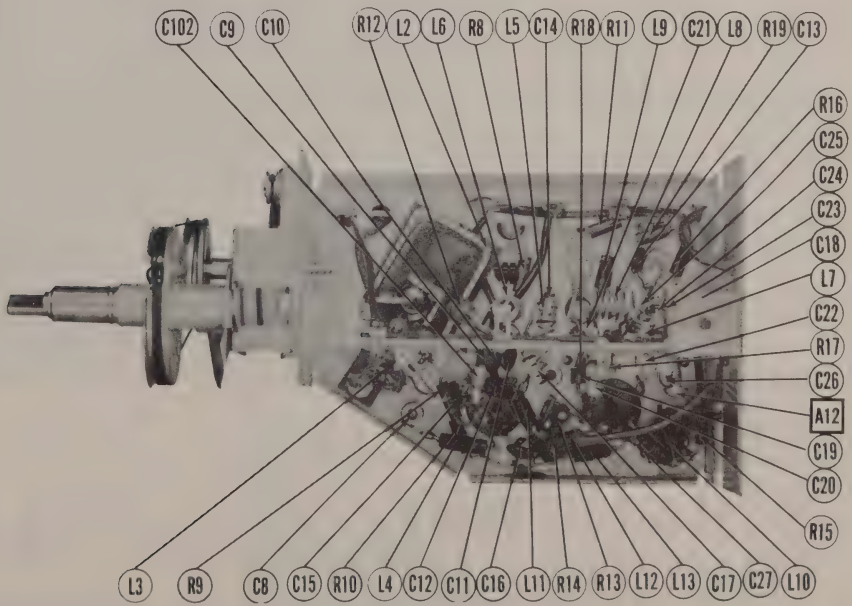


FIG.4A

FIG.4B



RF TUNER

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-.4VDC	.6VDC	0V	6.3VAC	120VDC	125VDC	0V		
V 2	6J6	122VDC	95VDC	0V	6.3VAC	-2VDC	§-6.6VDC	0V		
V 3	6CB6	-.5VDC	.2VDC	6.3VAC	0V	120VDC	120VDC	0V		
V 4	6CB6	-.3VDC	.4VDC	6.3VAC	0V	115VDC	115VDC	0V		
V 5	6CB6	-.3VDC	.4VDC	6.3VAC	0V	110VDC	110VDC	0V		
V 6	6CB6	0V	1.4VDC	6.3VAC	0V	110VDC	110VDC	0V		
V 7	6AC7	0V	0V	0V	.8VDC	25VDC	120VDC	6.3VAC	220VDC	
V 8	6AU6	#3.8VDC	#11VDC	0V	6.3VAC	#125VDC	#125VDC	#11VDC		
V 9	6AL5	-.2VDC	-.2VDC	6.3VAC	0V	0V	0V	-.5VDC		
V 10	12AU7	25VDC	-.5VDC	0V	0V	0V	40VDC	-.7VDC	0V	6.3VAC
V 11	6BF5	#25VDC	#35VDC	0V	6.3VAC	#130VDC	#125VDC	#25VDC		
V 12	12AU7	35VDC	-.5VDC	0V	0V	0V	7.4VDC	0V	3.4VDC	6.3VAC
V 13	6C4	100VDC 5VDC	0V	6.3VAC	0V	100VDC 5VDC	-7.5VDC -1.5VDC	0V		
V 14	6SN7GT	-4.3VDC 0V	410VDC 280VDC	28VDC 0V	-4.3VDC 0V	410VDC 280VDC	28VDC 0V	0V	6.3VAC	
V 15	6SN7GT	-75VDC	250VDC	0V	-4VDC -3VDC	180VDC 120VDC	2VDC -9.5VDC	6.3VAC	0V	
V 16	6CD6G	50VAC	6.3VAC	38VDC	-.3VDC	-.3VDC	0V	0V	180VDC	TOP CAP *
V 17	6W4GT	0V	0V	475VDC	0V	280VDC	0V	475VDC	475VDC	
V 18	1B3GT	* DO NOT MEASURE								
V 19	5U4G	0V	300VDC	0V	300VAC	0V	300VAC	0V	300VDC	
V 20	16KP4	0V	100VDC 0V	PIN 10 475VDC	PIN 11 100VDC	PIN 12 6.3VAC				

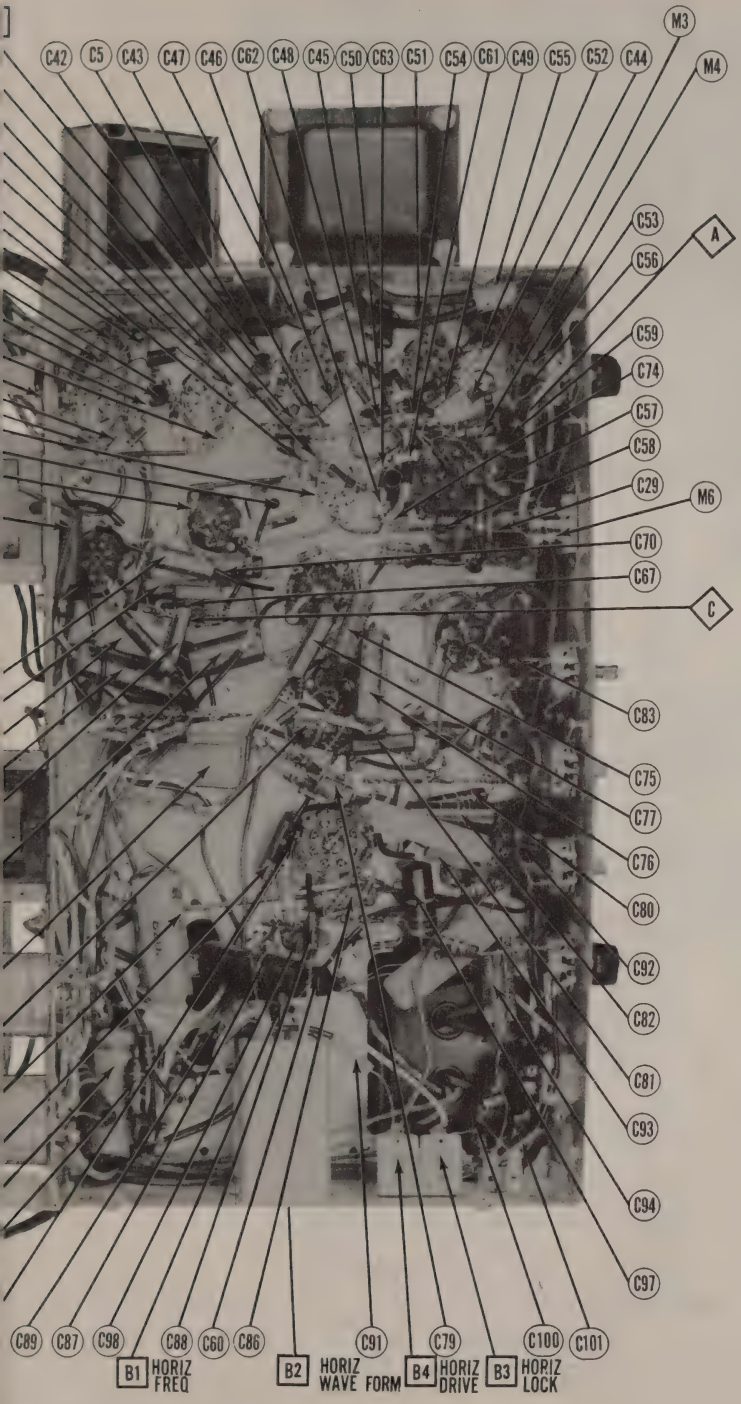
LOCAL - DISTANT SWITCH IN LOCAL POSITION
TV - PHONO SWITCH IN TV POSITION
§ TAKEN WITH VACUUM TUBE VOLTMETER
# MEASURED FROM JUNCTION OF R59, C1D, C6

RESISTANCE READINGS

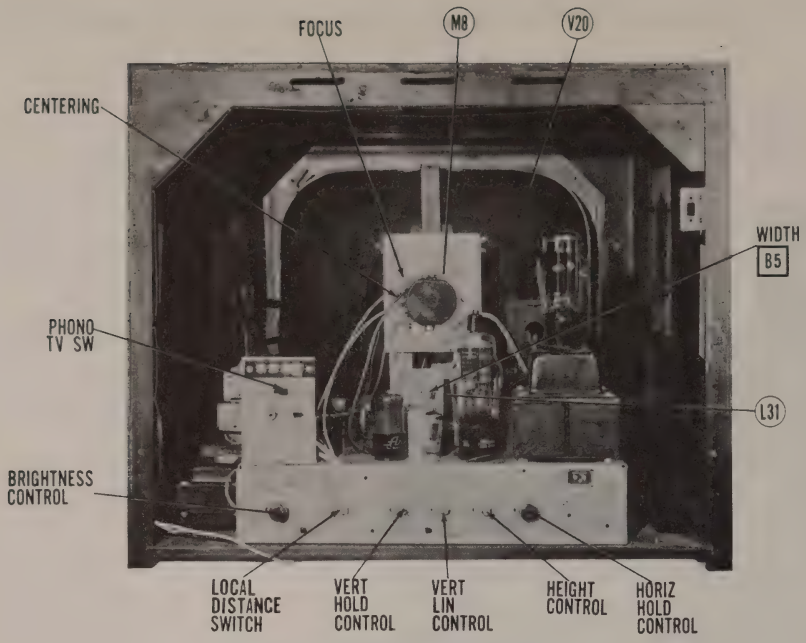
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	160KΩ	68Ω	0Ω	.2Ω	#330Ω	#0Ω	0Ω		
V 2	6J6	#330Ω	#10KΩ	.1Ω	.2Ω	105KΩ	10KΩ	0Ω		
V 3	6CB6	160KΩ	47Ω	.1Ω	0Ω	#470Ω	#470Ω	0Ω		
V 4	6CB6	165KΩ	47Ω	.1Ω	0Ω	#620Ω	#620Ω	0Ω		
V 5	6CB6	165KΩ	47Ω	.1Ω	0Ω	#770Ω	#770Ω	0Ω		
V 6	6CB6	12KΩ	150Ω	.1Ω	0Ω	#770Ω	#770Ω	0Ω		
V 7	6AC7	0Ω	0Ω	0Ω	1Meg	2KΩ	#300Ω	.1Ω	†6.7KΩ	
V 8	6AU6	#100KΩ	#1.1KΩ	0Ω	.1Ω	†1.2KΩ	†1.2KΩ	#1.1KΩ		
V 9	6AL5	Inf.	Inf.	.1Ω	0Ω	0Ω	0Ω	18KΩ		
V 10	12AU7	†470KΩ	10Meg	0Ω	0Ω	0Ω	#16KΩ	1Meg	0Ω	.1Ω
V 11	6BF5	600KΩ	#470Ω	0Ω	.1Ω	† 465Ω	†2.8KΩ	600KΩ		
V 12	12AU7	#30KΩ	2.2Meg	0Ω	0Ω	0Ω	#38KΩ	0Ω	270KΩ	.1Ω
V 13	6C4	▲2.2Meg ▲3.5Meg.	Inf.	.1Ω	0Ω	▲2.2Meg ▲3.5Meg	1.6Meg 2.6Meg	0Ω		
V 14	6SN7GT	2.2Meg	▲10KΩ	3KΩ 0Ω	2.2Meg	▲10KΩ	3KΩ 0Ω	0Ω	.1Ω	
V 15	6SN7GT	300KΩ	▲90KΩ	0Ω	800KΩ	▲160KΩ ▲190KΩ	330KΩ	.1Ω	0Ω	
V 16	6CD6G	470KΩ	.1Ω	300Ω	470KΩ	470KΩ	Inf.	0Ω	†8.3KΩ	TOP CAP ▲40Ω
V 17	6W4GT	Inf.	Inf.	100KΩ	Inf.	† 70Ω	Inf.	▲.3Ω	▲ 0Ω	
V 18	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲420Ω
V 19	5U4G	Inf.	50KΩ	Inf.	30Ω	Inf.	30Ω	Inf.	50KΩ	
V 20	16KP4	0Ω	35KΩ 0Ω	PIN 10 ▲100KΩ	PIN 11 270KΩ	PIN 12 .1Ω				

LOCAL-DISTANT SWITCH IN LOCAL POSITION
TV-PHONO SWITCH IN TV POSITION
MEASURED FROM JUNCTION OF R59, C1D, C6
† MEASURED FROM PIN 8 OF V 19
▲ MEASURED FROM PIN 3 OF V 17

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



ND ALIGNMENT IDENTIFICATION



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal hold control to the mid-position of its range.
Turn the horizontal lock trimmer (B3) to one turn out from fully clockwise.
Connect the vertical input lead of an oscilloscope to terminal C of L30.
Turn the horizontal waveform slug (B2) to maximum counter-clockwise and then three turns clockwise.
Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.
Adjust the waveform slug (B2) until the broad and narrow peaks of the waveform are of equal height as shown in figure 5. If necessary adjust B1 to keep the picture synchronized during adjustment of B2.
Remove the oscilloscope.
Turn the hold control to maximum clockwise and adjust B1 until the picture is out of sync. and shows one vertical or diagonal bar in the picture.
Turn the hold control to maximum counter-clockwise.
If the picture does not fall out of sync, momentarily interrupt the signal by switching to another channel and back again.
Turn the hold control slowly clockwise and carefully note the least number of bars present just before the picture synchronizes. There should be 2 bars, if not adjust B3 and repeat the check until 2 bars are present at the pull in point.

HORIZONTAL DRIVE AND WIDTH ADJUSTMENT
Turn the horizontal drive trimmer (B4) two turns counter-clockwise from maximum clockwise.
Adjust the width slug (B5) until the picture fills the mask horizontally.

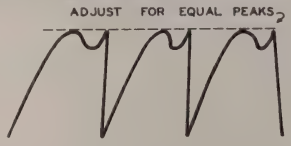
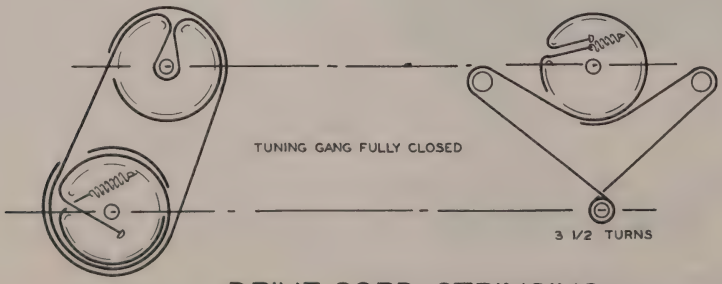
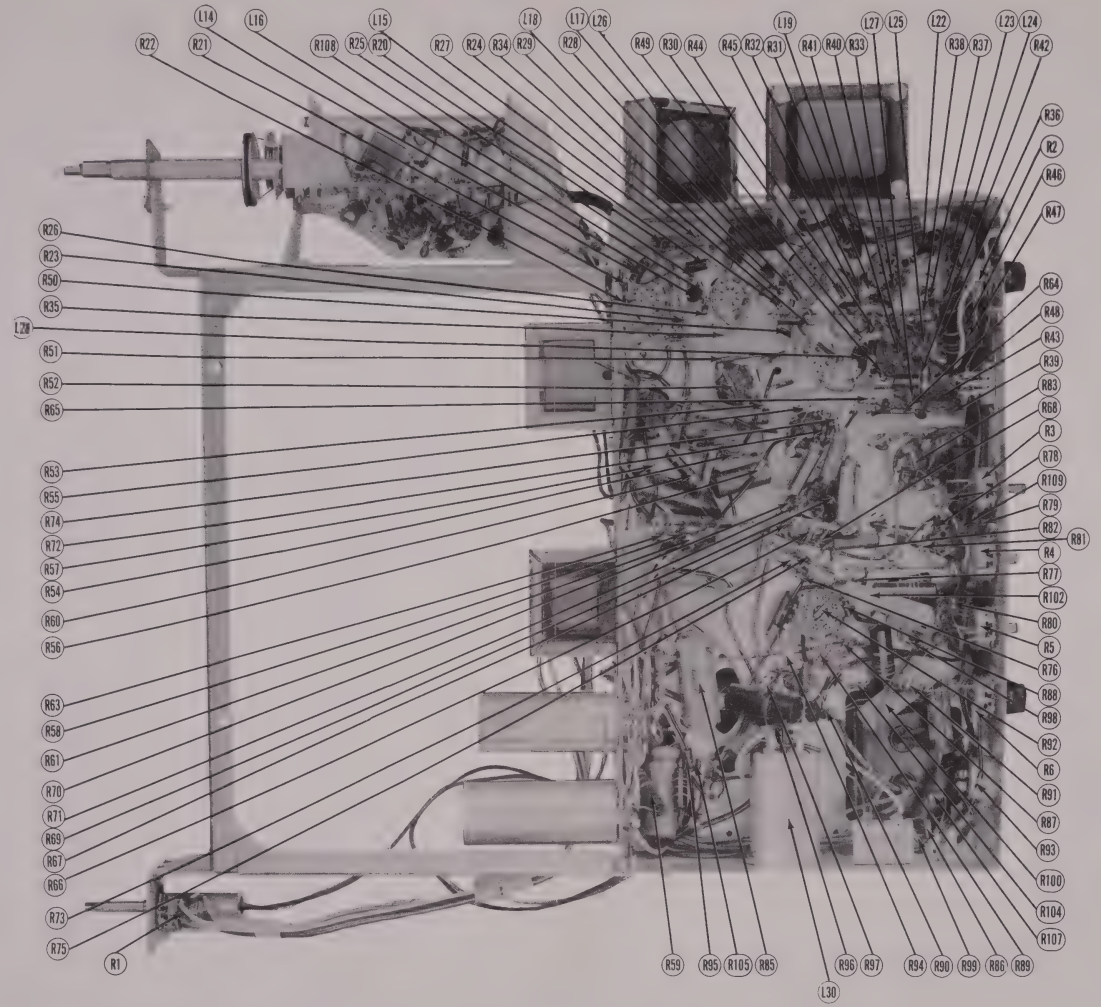


FIG. 5



DRIVE CORD STRINGING



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6CB6	6CB6	7CM	
V2	Converter	6J6	6J6	7BF	
V3	1st Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd Video IF Amp.	6CB6	6CB6	7CM	
V6A	4th Video IF Amp.	6CB6	6CB6	7CM	
B	4th Video IF Amp.	6BC5	6BC5	7BD	
V7	Video Amp.	6AC7	6AC7	8N	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Det.	6AL5	6AL5	6BT	
V10	AF Amp. - Sync. Clipper	12AU7	12AU7	9A	
V11	Audio Output	6BF5	6BF5	7BZ	
V12	Sync. Sep. -Sync. Amp.	12AU7	12AU7	9A	
V13	Vert. Osc.	6C4	6C4	6BG	
V14	Vert. Amp.	6SN7GT	6SN7GT	8BD	
V15	Hor. AFC-Hor. Osc.	6SN7GT	6SN7GT	8BD	
V16	Horiz. Output	6CD6G	6CD6G	5BT	
V17	Damper	6W4GT	6W4GT	4CG	
V18	H.V. Rectifier	1B3GT	1B3GT	3C	
V19	L.V. Rectifier	5U4G	5U4G	5T	
V20A	Picture Tube	16KP4	16KP4	12D	
B	Picture Tube	16KP4A	16KP4A	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	400	E22422-11	AFH86I62E				TVL-3764	▲ Filter
B	30	400						TVA-1504	■ Filter
C	80	200							▲ Output Cath. Decoupling
D	10	200							▲ Filter
C2A	10	450	E22422-10	AF882J		UPT403		TVL-3785	▲ Decoupling
B	40	400		PR850/100				TVA-1310	■ Decoupling
C	40	400							▲ Filter
D	100	50							Vert. Output Cath.
C3	4	300	A23714	PRS350/4		BR435		TVA-1601	Output Screen
C4	5	150	A23025-2	PRS150/4		BR415		TVA-1402	Stabilizing Cap
C5	5	150	A23025-2	PRS150/4		BR415		TVA-1402	AGC Filter
C6	4	300	A23714						Decoupling
C7	5	150	A23025-2						AF Amp. Cath. †
C8	1-6		C23106-3		829-6				Variable Trimmer
C9	1000		A23078	BPD-001	DD-102		801-001	19C1	AGC Filter
C10	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Amp. Plate Dec.
C11	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Amp. Plate Dec.
C12	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Bypass
C13	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Bypass
C14	13		C20205-10				NPOK-13		Fixed Padder
C15	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Amp. Cath.
C16	1000		A23078	BPD-001	DD-102		801-001		Filament Bypass
C17	14		C20205-14				NPOK-14		RF Coupling
C18	1000		A23078	BPD-001	DD-102		801-001	19C1	Conv. Plate Dec.
C19	3.3		A20238-5	SI3.3NPO	TCZ-3.3		NPOK-3.3		Osc. Coupling
C20	33		C20205-12	SI33	D6-33		GP1K-33	19C24	Osc. Grid Cap
C21	8.2		C20205-13	SI8.2NPO			NPOK-8.2		Fixed Trimmer
C22	14		C20205-14				NPOK-14		Fixed Trimmer
C23	1-6		C23106-3		829-6				Variable Trimmer
C24	82		C20204-820	SI82	D6-820		GP1K-82		Fixed Padder
C25	18		C20205-15		TCZ-18		NPOK-18		Fixed Padder
C26	.5-3		C23106-1		829-3				Variable Trimmer
C27	5		C20205-9				N220K-5		Fixed Trimmer *
C28	1000		A23078	BPD-001	DD-102		801-001	19C1	AGC Filter
C29	1000		A23078	BPD-001	DD-102		801-001	19C1	AGC Filter
C30	100		C20204-101	SI100	D6-101		GP1K-100	19C11	IFCoupling
C31	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	AGC Filter
C32	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	RF Bypass
C33	610		C20351-1	SI680	D6-681	1W5T7	GP2K-680	19C17	1st V. IF Dec.
C34	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	1st V. IF Fil.
C35	39						N330K-39		Fixed Trimmer
C36	47		C20205-19	SI47	D6-470	5W5Q5	GP1K-47	19C25	IF Coupling
C37	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	AGC Filter
C38	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	RF Bypass
C39	610		C20351-1	SI680	D6-681	1W5T7	GP2K-680	19C17	2nd V. IF Dec.
C40	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	2nd V. IF Fil.
C41	39						N330K-39		Fixed Trimmer
C42	22		C20205-18	SI22	D6-220	5W5Q25	GP1K-22	19C23	IF Coupling
C43	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	AGC Filter
C44	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	AGC Filter
C45	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	RF Bypass
C46	610		C20351-1	SI680	D6-681	1W5T7	GP2K-680	19C17	3rd V. IF Dec.
C47	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	3rd V. IF Fil.
C48	47		C20205-19	SI47	D6-470	5W5Q5	GP1K-47	19C25	IF Coupling
C49	610		C20351-1	SI680	D6-681	1W5T7	GP2K-680	19C17	4th V. IF Dec.
C50	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	4th V. IF Cath.
C51	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	4th V. IF Fil.
C52	7		C20205-17	SI6.8NPO	TCZ-6.8	5W5Q1	NPOK-6.8		IF Coupling
C53	100		C20204-101	SI100	D6-101	5W5T1	GP1K-100	19C11	IF Coupling
C54	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	DAGC Dec.
C55	5		C20205-9	SI5NPO	TCZ-4.7	5R5V5	NPOK-5	M8-55	V. Det. Filter
C56	.1	200	D20291-104	P288-1	DF-104	PTE4P1		2TM-P1	Video Coupling
C57	5		C20205-9	SI5	TCZ-4.7	5W5V5	NPOK-5	M8-55	V. Amp. Grid
C58	.1	400	D20292-104	P488-1	DF-104	PTE4P1		4TM-P1	Video Coupling
C59	.047	600	D20292-473	P688-047	DF-503	PTE6S5		6TM-S47	Pic. Tube Grid
C60	.047	600	D20292-472	P688-047	DF-503	PTE6S5		6TM-S47	Accel. Anode
C61	2.2		C20205-7		TCZ-2.2				S. IF Coupling
C62	68		C20205-11				N220K-68		Fixed Trimmer
C63	33		C20205-12	SI33	D6-330	5W5Q4	GP1K-33	19C24	S. IF Coupling
C64	5000		A21674	BPD-005	DD-502	1D5D5	811-005	29C1	S. IF Cath.
C65	5000		A21674	BPD-005	DD-502	1D5D5	811-005	29C1	S. IF Dec.
C66	5		C20205-9				N220K-5		Fixed Trimmer
C67	330	500	C20290-331	SI330	D6-331	5W5T3	GP2K-330	19C14	Diode Load Cap

CAPACITO

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACE: ARVIN PART No.	REPLACE: AEROVOX PART No.	REPLACE: CENTR PART
C68	.0022	600	D20295-222	P688-0022	D6-2
C69	.0047	600	D20295-472	P688-0047	D6-4
C70	.01	600	D20295-103	P688-01	D6-1
C71	.022	400	D20292-223	P488-022	DF-2
C72	.22	200	D20291-224	P488-22	
C73	.01	600	D20295-103	P688-01	D6-1
C74	270		C20300-271	S1270	D6-2
C75	.01	600	D20295-103	P688-01	D6-1
C76	.1	400	D20292-104	P488-1	DF-1
C77	.01	600	D20295-103	P688-01	D6-1
C78	.0022	600	D20295-222	P688-0022	D6-2
C79	.0047	600	D20295-472	P688-0047	D6-4
C80	.0047	600	D20295-472	P688-0047	D6-4
C81	.0047	600	D20324-472	P688-0047	D6-4
C82	.047	600	D20295-473	P688-047	
C83	.1	600	D20295-104	P688-1	DF-1
C84	39	500	C20290-390	1468-00004	D6-3
C85	.0022	600	D20295-222	P688-0022	D6-2
C86	.022	400	D20292-223	P488-022	DF-2
C87	.22	200	D20291-224	P488-22	
C88	180	1000	C22412-181		
C89	.01	600	C20324-103	P688-01	
C90	.0015	600	C20324-152	P688-0015	D6-1
C91	560	500	C20290-561	S1560	D6-5
C92	.047	600	D20292-473	P688-047	DF-5
C93	560	500	C20290-561	S1560	D6-5
C94	.22	400	D20291-224	P488-22	
C95	.1	1000	C20329-104	1084-1	
C96	.47	200	D20291-474	P288-47	
C97	.047	600	D20295-473	P688-047	DF-5
C98	390	500	C20290-391	1468-0004	D6-3
C99	1000		A23078	BPD-001	DD-1
C100	.01	600	D20358-103	P688-01	D6-1
C101	.01	600	D20358-103	P688-01	D6-1
C102	47		C20204-470	S147	D6-4
C103	.1	600	D20295-104	P688-1	DF-1

* Some Models Use 14MMF In This Application.
† Used In Late Production Models.

CO

ITEM No.	RATING: RESIST-ANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: IRC PART No.	CLAR PART
R1A	2000Ω	1/2		Concentrikit	
B	1Meg	1/2		B17-110 *	
C	Shaft End			B13-137 *	
D	Switch		E-22464-21	E-187 *	RTV
R2A	50KΩ	1/2		76-1 *	
B	Shaft		E-22464-25	Q11-123	AG-4
R3A	1Meg	1/2	Not req.	Not req.	KSS-
B	Shaft		E-22464-24	Q11-137	AG-6
R4A	3000Ω	1/2	Not req.	Not req.	KSS-
B	Shaft		E-22464-26	Q11-112	AG-1
R5A	2.5Meg	1/2	Not req.	Not req.	FKS-
B	Shaft		D-22464-10	Q11-239	AG-8
R6A	50KΩ	1/2	Not req.	Not req.	FKS-
B	Shaft		E-22464-25	Q11-123	AG-4
			Not req.	Not req.	KSS-

* Additional Parts To Be Used In "Concentrikit".

RESI

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: IRC PART No.
R7	100Ω 20%	1/2	C20061-101	BTS-100
R8	3300Ω	1/2	C20061-332	BTS-3300
R9	560Ω 20%	1/2	C20061-561	BTS-560
R10	68Ω 20%	1/2	C20061-680	
R11	330Ω 20%	1/2	C20061-331	BTS-330
R12	3.9Ω	1		
R13	5600Ω	1/2	C22381-562	
R14	100KΩ 20%	1/2	C20061-104	
R15	10KΩ	1/2	C22381-103	
R16	330Ω 20%	1/2	C20061-331	BTS-330
R17	22KΩ	1/2	C22381-223	
R18	10KΩ	1/2	C22381-223	
R19	330 20%	1/2	C20061-331	BTS-330
R20	3300Ω 20%	1/2	C20061-332	BTS-3300
R21	8200Ω	1/2	C22381-822	
R22	47Ω	1/2	C22381-470	
R23	470Ω 20%	1/2	C20061-471	BTS-470
R24	3300Ω 20%	1/2	C20061-332	BTS-3300
R25	18KΩ 5%	1/2	C22382-183	
R26	47Ω	1/2	C22381-470	
R27	470Ω 20%	1/2	C20061-471	BTS-470
R28	18KΩ 5%	1/2	C22382-183	
R29	47Ω	1/2	C22381-470	
R30	470Ω 20%	1/2	C20061-471	BTS-470
R31	12KΩ 5%	1/2	C22382-123	
R32	150Ω	1/2	C22381-151	BTS-150
R33	470Ω 20%	1/2	C20061-471	BTS-470
R34	150Ω	1/2	C22381-151	BTS-150
R35	150Ω	1/2	C22381-151	BTS-150
R36	6800Ω	1/2	C22381-682	BTS-6800
R37	220KΩ	1/2	C22381-224	BTS-220K
R38	56KΩ	1/2	C22381-563	BTS-56K
R39	3300Ω	1/2	C20061-332	BTS-3300
R40	1Meg 20%	1/2	C20061-105	BTS-1Meg
R41	68Ω	1/2	C22381-680	
R42	5600Ω	1		BTA-5600
R43	470KΩ	1/2	C22381-474	BTS-470K
R44	1000Ω	1/2	C22381-102	BTS-1000
R45	220KΩ	1/2	C22381-224	BTS-220K
R46	22KΩ	1/2	C22381-223	BTS-22K
R47	47KΩ	1/2	C22381-473	BTS-47K
R48	470KΩ	1/2	C22381-474	BTS-470K

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ARVIN PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6CB6	6CB6	7C M	
V2	Converter	6J6	6J6	7D F	
V3	1st Video IF Amp.	6CB6	6CB6	7C M	
V4	2nd Video IF Amp.	6CB6	6CB6	7C M	
V5	3rd Video IF Amp.	6CB6	6CB6	7C M	
V6A	4th Video IF Amp.	6CB6	6CB6	7C M	
B	4th Video IF Amp.	6BC5	6BC5	7BD	
V7	Video Amp.	6AC7	6AC7	8N	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Det.	6AL5	6AL5	6BT	
V10	AF Amp.- Sync. Clipper	12AU7	12AU7	9A	
V11	Audio Output	83F5	83F5	7BZ	
V12	Sync. Sep. -Sync. Amp.	12AU7	12AU7	9A	
V13	Vert. Osc.	6C4	6C4	6BG	
V14	Vert. Amp.	6SN7GT	6SN7GT	8BD	
V15	Hor. AFC -Hor. Osc.	6SN7GT	6SN7GT	8BD	
V16	Horiz. Output	6CD6G	6CD6G	5BT	
V17	Damper	6W4GT	6W4GT	4CG	
V18	H. V. Rectifier	1B3GT	1B3GT	3C	
V19	L. V. Rectifier	5U4G	5U4G	5T	
V20A	Picture Tube	16KP4	16KP4	12D	
B	Picture Tube	16KP4A	16KP4A	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: ARVIN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	400	E22422-11	APH8G1G2E				TVL-3764	▲ Filter
B	30	400						TVA-1504	■ Filter
C	80	200							▲ Output Cath.
D	10	200							Decoupling
C2A	10	450	E23422-10	AF8822		UPT403		TVL-3785	▲ Decoupling
B	40	400		PRS50/100				TVA-1310	Decoupling
C	40	400							▲ Filter
D	100	50							Vert. Output Cath.
C3	4	300	A23714	PRS350/4		BR435		TVA-1601	Output Screen
C4	5	150	A23025-2	PRS150/4		BR415		TVA-1402	Stabilizing Cap
C5	5	150	A23025-2	PRS150/4		BR415		TVA-1402	AGC Filter
C6	4	300	A23714						Decoupling
C7	5	150	A23025-2						AF Amp. Cath. †
C8	1-6		C23103-3		829-6				Variable Trimmer
C9	1000		A23078	BPD-001	DD-102		801-001	19C1	AGC Filter
C10	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Amp. Plate Dec.
C11	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Amp. Plate Dec.
C12	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Bypass
C13	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Bypass
C14	13		C20025-10		NPOK-13		NPOK-13		Fixed Padder
C15	1000		A23078	BPD-001	DD-102		801-001	19C1	RF Amp. Cath.
C16	1000		A23078	BPD-001	DD-102		801-001	19C1	Filament Bypass
C17	14		C20025-14				NPOK-14	19C1	RF Coupling
C18	1000		A23078	BPD-001	DD-102		801-001	19C1	Conv. Plate Dec.
C19	3.3		A20025-5	SLB.3NPO1	TCZ-3.3		NPOK-3.3		Osc. Coupling
C20	33		C20025-12	SI33	D6-33		GPIK-33	19C24	Osc. Grid Cap
C21	8.2		C20025-13	SI8.2NPO			NPOK-8.2		Fixed Trimmer
C22	14		C20025-14				NPOK-14		Fixed Trimmer
C23	1-6		C23106-3		829-6				Variable Trimmer
C24	82		C20204-820	SI82	D6-820		GPIK-82		Fixed Padder
C25	18		C20025-15		TCZ-18		NPOK-18		Fixed Padder
C26	5-3		C23106-1		829-3				Variable Trimmer
C27	5		C20025-9				N220K-5		Osc. Coupling *
C28	1000		A23078	BPD-001	DD-102		801-001	19C1	AGC Filter
C29	1000		A23078	BPD-001	DD-102		801-001	19C1	AGC Filter
C30	100		C20204-101	SI100	DD-101		GPIK-100	19C11	IFCoupling
C31	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	AGC Filter
C32	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	RF Bypass
C33	610		C23051-1	SI680	D6-681	1WST7	GPIK-680	19C17	1st V. IF Dec.
C34	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	1st V. IF Fil.
C35	39						N330K-39		Fixed Trimmer
C36	47		C20205-19	SI47	D6-470	5WSQ5	GPIK-47	19C25	IF Coupling
C37	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	AGC Filter
C38	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	RF Bypass
C39	610		C23051-1	SI680	D6-681	1WST7	GPIK-680	19C17	2nd V. IF Dec.
C40	1000		A23078	BPD-001	DD-102	1WSD1	N330K-39	19C1	2nd V. IF Fil.
C41	39								Fixed Trimmer
C42	22		C20205-18	SI22	D6-220	5WSQ25	GPIK-22	19C23	IF Coupling
C43	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	AGC Filter
C44	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	AGC Filter
C45	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	RF Bypass
C46	610		C23051-1	SI680	D6-681	1WST7	GPIK-680	19C17	3rd V. IF Dec.
C47	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	3rd V. IF Fil.
C48	47		C20205-19	SI47	D6-470	5WSQ5	GPIK-47	19C25	IF Coupling
C49	610		C23051-1	SI680	D6-681	1WST7	GPIK-680	19C17	4th V. IF Dec.
C50	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	4th V. IF Fil.
C51	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	4th V. IF Fil.
C52	7		C20205-17	SI7.0NPO	TCZ-6.8	5WSQ	NPOK-6.8		IF Coupling
C53	100		C20204-101	SI100	D6-101	5WST1	GPIK-100	19C11	IF Coupling
C54	1000		A23078	BPD-001	DD-102	1WSD1	801-001	19C1	DAGC Dec.
C55	5		C20205-9	SI5NPO	TCZ-4.7	5R5V5	NPOK-5	M8-55	V. Det. Filter
C56	.1	200	D20281-104	P288-1	DF-104	PTE42P1		47M-P1	Video Coupling
C57	5		C20205-9	SI5	TCZ-4.7	5W5V5	NPOK-5	M8-55	V. Amp. Grid
C58	.1	400	D20282-104	P488-1	DF-104	PTE42P1		47M-P1	Video Coupling
C59	.047	600	D20282-473	P688-047	DF-503	PTE685		67M-S47	Pic. Tube Grid
C60	.047	600	D20282-473	P688-047	DF-503	PTE685		67M-S47	Accel. Anode
C61	2.2		C20205-7		TCZ-2.2				S. IF Coupling
C62	68		C20205-11				N220K-68		Fixed Trimmer
C63	33		C20205-12	SI33	D6-330	5WSQ4	GPIK-33	19C24	S. IF Coupling
C64	5000		A21674	BPD-005	DD-502	1D5D5	81-005	29C1	S. IF Det.
C65	5000		A23091	BPD-005	DD-502	1D5D5	81-005	29C1	S. IF Det.
C66	5		C20205-9				N220K-5		Fixed Trimmer
C67	330	500	C20290-331	SI330	D6-331	5WST3	GPIK-330	19C14	Diode Load Cap

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: ARVIN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C68	.0022	600	D20295-223	P688-0022	D6-322	PTE6D2	GP3M-0022	6TM-D22	De-emphasis
C69	.0047	600	D20295-472	P688-0047	D6-472	PTE6D5	GP3M-0047	6TM-D47	Audio Coupling
C70	.01	600	D20295-103	P688-01	D6-103	PTE6S1	82L-01	6TM-S1	Audio Coupling
C71	.022	400	D20282-223	P488-022	DF-203	PTE6S3		47M-S22	Audio Coupling
C72	.22	200	D20281-224	P488-22		GT2P25		2TM-P23	Bias Filter
C73	.01	600	D20295-103	P688-01	D6-103	PTE6S1	82L-01	6TM-S1	Output Plate
C74	270		C20200-271	S3370	D6-371	SW5T25	GP3K-270	19C31	Sync. Coupling
C75	.01	600	D20295-103	P688-01	D6-103	PTE6S1	82L-01	6TM-S1	Sync. Coupling
C76	.1	400	D20282-104	P488-1	DF-104	PTE42P1		47M-P1	Sync. Coupling
C77	.01	600	D20295-103	P688-01	D6-103	PTE6S1	82L-01	6TM-S1	Sync. Coupling
C78	.0022	600	D20295-223	P688-0022	D6-322	PTE6D2	GP3M-0022	6TM-D22	Integrator Net
C79	.0047	600	D20295-472	P688-0047	D6-472	PTE6D5	GP3M-0047	6TM-D47	Integrator Net
C80	.0047	600	D20295-472	P688-0047	D6-472	PTE6D5	GP3M-0047	6TM-D47	Integrator Net
C81	.0047	600	D20234-472	P688-0047	D6-472	PTE6D5	GP3M-0047	6TM-D47	Vert. Sync. Grid
C82	.047	600	D20295-473	P688-047		PTE6S5		6TM-S47	Vert. Discharge
C83	.1	600	D20295-104	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C84	39	500	C20290-390	1466-00004	D6-390	1W5G4	GP1K-39	1FM-54	Hor. Sync. Coupling
C85	.0022	600	D20295-222	P688-0022	D6-322	PTE6D2	GP3M-0022	6TM-D22	Hor. Sync. Coupling
C86	.022	400	D20282-223	P488-022	DF-203	PTE6S2		47M-S22	AFC Filter
C87	.22	200	D20281-224	P488-22		GT2P25		2TM-P23	AFC Filter
C88	180	1000	C23412-181						Hor. Osc. Grid
C89	.01	600	C20324-103	P688-01		PTE6S1		6TM-S1	Fixed Trimmer
C90	.005	600	C20324-153	P688-0015	D6-152	1W5D15	GP2L-0015	6TM-D15	Hor. Discharge
C91	560	500	C20290-561	S1560	D6-561	5W5T5	GP2K-560	1FM-35	Hor. Sweep Coupling
C92	.047	600	D20295-473	P688-047	DF-503	PTE685		67M-S47	Hor. Output Screen
C93	560	500	C20290-561	S1560	D6-561	5W5T5	GP2K-560	1FM-35	Hor. Output Screen
C94	.22	400	D20291-224	P488-22		GT4P25		4TM-P22	Hor. Output Cath.
C95	.1	1000	C20339-104	1084-1		GT1S1			Damper Filter
C96	.47	300	D20281-474	P288-47		GT2P5		2TM-P47	Hor. Sweep Coupling
C97	.047	600	D20295-473	P688-047	DF-503	PTE685		67M-S47	Hor. AFC Plate
C98	390	500	C20290-391	1466-00008	D6-391	5W5T4	GP2K-390	1FM-34	AFC Filter
C99	1000		A23078	BPD-001	DD-102	1W5D1	801-001	19C1	Fluorescent Bypass
C100	.01	600	D20358-103	P688-01	D6-103	PTE6S1	82L-01	6TM-S1	Line Filter
C101	.01	600	D20358-103	P688-01	D6-103	PTE6S1	82L-01	6TM-S1	Line Filter
C102	47		C20204-470	SI47	D6-470		GPIK-47	19C25	RF Coupling
C103	.1	600	D20295-104	P688-1	DF-104	PTE6P1		6TM-P1	Decoupling †

* Some Models Use 14MMF In This Application.
† Used In Late Production Models.

CONTROLS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: ARVIN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	2000Ω	½		Concentrikit			Contrast Control - Front
B	1Meg	½		B17-110 *		SBB-857-S	Volume Control And SW - Rear
C	Shaft End		E-22464-214	B13-137 *	RTV-196		Attach Per Instructions In "Concentrikit"
D	Switch			78-1 *			Attach Per Instructions In "Concentrikit"
R2A	50KΩ	½	E-22464-25	Q11-123	AG-44-S	AM-31	Brightness Control
B	Shaft		Not req.	Not req.	KS5-3	AK-4	Attach To R2A Per Instructions
R3A	1Meg	½	E-22464-24	Q11-137	AG-61-S	AM-69	Vertical Hold Control
B	Shaft		Not req.	Not req.	KS5-3	AK-4	Attach To R3A Per Instructions
R4A	3300Ω	½	E-22464-26	Q11-112	AG-15-S	AM-7	Vertical Linearity Control
B	Shaft		Not req.	Not req.	FK3-1/4	AK-1	Attach to R4A Per Instructions
R5A	2.5Meg	½	E-22464-10	Q11-239	AG-84-S	AM-83	Height Control
B	Shaft		Not req.	Not req.	FK3-1/4	AK-1	Attach to R5A Per Instructions
R6A	50KΩ	½	E-22464-25	Q11-123	AG-44-S	AM-31	Horizontal Hold Control
B	Shaft		Not req.	Not req.	KS5-3	AK-4	Attach to R6A Per Instructions

* Additional Parts To Be Used In "Concentrikit".

RESISTORS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: ARVIN PART No.	IRC PART No.	IDENTIFICATION CODES
					ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R7	100Ω	20%	C20061-101	BTS-100	Antenna Loading
R8	3300Ω	½	C20061-332	BTS-3300	AGC Network
R9	560Ω	20%	C20061-561	BTS-560	RF Amp. Grid
R10	68Ω	20%	C20061-680		RF Amp. Cathode
R11	330Ω	20%	C20061-331	BTS-330	RF Amp. Plate
R12	3.9Ω				Parasitic Suppressor - See Note 1
R13	5600Ω	½	C23181-562		Converter Grid
R14	100KΩ	20%	C20061-104		Converter Grid
R15	10KΩ	½	C23181-103		Converter Plate
R16	330Ω	20%	C20061-331	BTS-330	Converter Plate Decoupling
R17	22KΩ	½	C23181-223		Osc. Coil Shunt
R18	10KΩ	½	C23181-233		Osc. Grid
R19	330Ω	20%	C20061-331	BTS-330	Osc. Plate
R20	3300Ω	20%	C20061-332	BTS-3300	AGC Network
R21	8200Ω	½	C23181-822		1st Video IF Amp. Grid
R22	47Ω		C23181-470		1st Video IF Amp. Cathode
R23	470Ω	20%	C20061-471	BTS-470	1st Video IF Amp. Decoupling
R24	3300Ω	20%	C20061-332	BTS-3300	AGC Network
R25	18KΩ	5%	C23182-183		2nd Video IF Amp. Grid
R26	47Ω		C23181-470		2nd Video IF Amp. Cathode
R27	470Ω	20%	C20061-471	BTS-470	2nd Video IF Amp. Decoupling
R28	18KΩ	5%	C23182-183		3rd Video IF Amp. Grid
R29	47Ω		C23181-470		3rd Video IF Amp. Cathode
R30	470Ω	20%	C20061-471	BTS-470	3rd Video IF Amp. Decoupling
R31	12KΩ	5%	C23182-123		4th Video IF Amp. Grid
R32	150Ω		C23181-151	BTS-150	4th Video IF Amp. Cathode
R33	470Ω	20%	C20061-471	BTS-470	4th Video IF Amp. Decoupling
R34	150Ω		C23181-151	BTS-150	Decoupling
R35	150Ω		C23181-151	BTS-150	Decoupling
R36	6800Ω		C23181-682	BTS-6800	Video Det. Diode Load
R37	220KΩ		C23181-224	BTS-220K	AGC Load
R38	56KΩ		C23181-563	BTS-56K	AGC Network
R39	3300Ω		C20061-332	BTS-3300	AGC Network
R40	1Meg	20%	C20061-105	BTS-1Meg	Video Amp. Grid
R41	68Ω		C23181-680		Video Amp. Cathode
R42	5600Ω			BTA-5600	Video Amp. Plate - See Note 8
R43	470KΩ		C23181-474	BTS-470K	Voltage Divider
R44	100KΩ		C23181-104	BTS-100K	Voltage Divider
R45	22KΩ		C23181-224	BTS-220K	Voltage Divider
R46	22KΩ		C23181-223	BTS-22K	Voltage Divider - See Note 7
R47	47KΩ		C23181-473	BTS-47K	Voltage Divider - See Note 7
R48	470KΩ		C23181-474	BTS-470K	Picture Tube Cathode

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: ARVIN PART No.	IRC PART No.	IDENTIFICATION CODES
R49	100KΩ	½	C23181-104		Sound IF Amp. Grid Leak
R50	1000Ω	½	C23181-102	BTS-1000	Sound IF Amp. Cathode
R51	1000Ω	½	C23181-102	BTS-1000	Sound IF Amp. Decoupling
R52	18KΩ	½	C23181-183	BTS-18K	Ratio Det. Diode Load
R53	47Ω	½	C23181-470	BW-5-47	Balancing
R54	27KΩ	½	C23181-273	BTS-27K	De-emphasis
R55	10Meg	½	C23181-106	BTS-10Meg	AF Amp. Grid - See Note 9
R56	470KΩ	½	C23181-474	BTS-470K	AF Amp. Plate
R57	470KΩ	½	C23181-474	BTS-470K	Output Grid
R58	180KΩ	5% ½	C23182-184	BTS-180K-5%	Output Grid
R59	470Ω	½	C23103-471	BTS-470	Output Cathode
R60	8250Ω	3			Output Screen - See Note 2
C61	220Ω	3	C23202-221	BW-2-220	Output Decoupling
C62	3300Ω	2	C23181-332	BTS-3300	AF Amp. Cathode
R63	180KΩ	5% ½	C23182-184		Boltage Divider
R64	10KΩ	20% ½	C20061-103	BTS-10K	Isolation - See Note 13
R65	270KΩ	½	C23181-274	BTS-270K	Isolation
R66	2.2Meg	½	C23181-225	BTS-2.2Meg	Sync. Sep. Grid
R67	47KΩ	20% ½	C20061-473	BTS-47K	Sync. Sep. Plate
R68	47KΩ	20% ½	C20061-473	BTS-47K	Voltage Divider
R69	270KΩ	½	C23181-274	BTS-270K	Sync. Amp. Cathode
R70	270KΩ	½	C23181-274	BTS-270K	Sync. Amp. Plate
R71	18KΩ	5% ½	C23182-183	BTS-18K-5%	Voltage Divider - See Note 3
R72	1Meg	20% ½	C20061-105	BTS-1Meg	Sync. Clipper Grid
R73	22KΩ	½	C20070-223	BTA-22K	Sync. Clipper Plate
R74	18KΩ	5% ½	C23182-183	BTS-18K-5%	Voltage Divider - See Note 3
R75	22KΩ	½	C23181-223	BTS-22K	Integrator
R76	8200Ω	½	C23181-822	BTS-8200	Integrator
R77	8200Ω	½	C23181-822	BTS-8200	Integrator
R78	1.5Meg	½	C23181-155	BTS-1.5Meg	Vert. Osc. Grid - See Note 4
R79	100KΩ	½	C23181-104	BTS-100K	Vert. Osc. Grid
R80	2.7Meg	½	C23181-275	BTS-2.7Meg	Vert. Osc. Plate - See Note 5
R81	2.2Meg	½	C23181-225	BTS-2.2Meg	Vert. Osc. Transformer Shunt
R82	1500Ω	5% ½	C23181-152	BTS-1500-5%	Vert. Peaking
R83	2.2Meg	½	C23181-225	BTS-2.2Meg	Vert. Amp. Grid
R84	820Ω	½	C23181-821	BTS-820	Vert. Amp. Cathode - See Note 6
R85	8200Ω	10		1 3/4A-8000	Decoupling - Wire Wound - See Note 10 and 14
R86	470KΩ	½	C23181-474	BTS-470K	Voltage Divider
R87	8200Ω	½	C23181-822	BTS-8200	Horizontal AFC Filter
R88	820KΩ	5% ½	C23182-824	BTS-820K-5%	Horizontal AFC Grid
R89	150KΩ	½	C23181-154	BTS-150K	Horizontal AFC Cathode
R90	180KΩ	5% ½	C23182-184	BTS-180K-5%	Horizontal AFC Plate
R91	180KΩ	5% ½	C23183-184	BTA-180K-5%	Horizontal AFC Plate
R92	2.7Meg	5% ½	C23182-275	BTS-2.7Meg-5%	Voltage Divider
R93	100KΩ	½	C23181-104	BTS-100K	Voltage Divider
R94	120KΩ	½	C20070-124	BTA-120K	Horizontal Osc. Grid
R95	91KΩ	5% ½	C23183-913		Horizontal Osc. Grid
R96	8200Ω	½	C23181-822	BTS-8200	Horizontal Osc. Transformer Shunt
R97	8200Ω	½	C23181-822	BTS-8200	Horizontal Feedback
R98	1KΩ	½	C23181-470		Parasitic Suppressor
R99	470KΩ	½	C23181-474	BTS-470K	Horizontal Output Grid
R100	300Ω	10	C23970-4	1 3/4A-300	Horizontal Output Cathode - Wire Wound
R101	3300Ω	½	C23181-332	BTS-3300	Horizontal Output Cathode - See Note 6
R102	8200Ω	10		1 3/4A-8000	Horizontal Output Screen - Wire Wound
R103	100Ω	½	C20308-53		HV Rectifier Filament
R104	100KΩ	20% ½	C20061-101	BTS-100K	ACC Anode Load
R105	1000Ω	20% ½	C20061-102	BTS-1000	Decoupling - See Note 6.
R106	100Ω	½	C23181-101	BTS-100	Decoupling - See Note 13
R107	470KΩ	½	C23181-474	BTS-470K	Isolation
R108	27KΩ	5% ½	C23182-273		2nd Video IF Trap Coil Shunt
R109	10Meg	½	C23181-106	BTS-10Meg	Voltage Divider

Note 1. Some Models Use 4.7Ω Resistor In This Application.
Note 2. Some Models Use 2200Ω Resistor In This Application.
Note 3. Some Models Use 15KΩ Resistor In This Application.
Note 4. Some Models Use 1.2Meg Resistor In This Application.
Note 5. Some Models Use 2.2Meg Resistor In This Application.
Note 6. Not Used In All Models.
Note 7. Some Models Use 68KΩ Resistor In Place Of R46 And R47.
Note 8. Late Production Models Use 2200Ω Resistor In This Application.
Note 9. Late Production Models Use 470KΩ Resistor In This Application.
Note 10. Late Production Models Use 680Ω Resistor In This Application.
Note 13. Late Production Models Use 330Ω 2 Watt Resistor In This Application.
Note 14. Used Only In Late Production Models.
Note 14. Some Models 12KΩ Resistor In This Application.

TRANSFORMER (POWER)

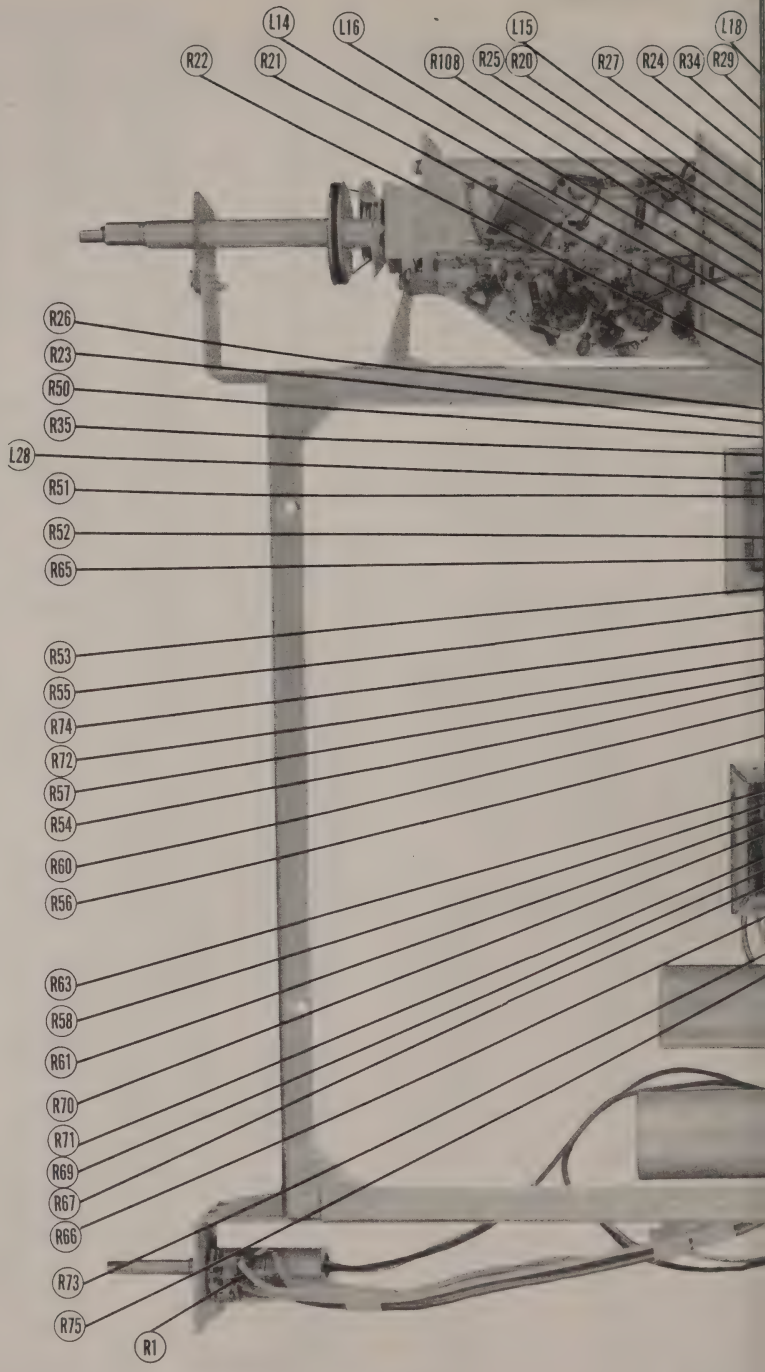
ITEM No.	RATING: PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA: ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	620VCT	5V	6.3V	E23837			
	②1.23A	250ADC	③ 3A	④1.2A				
T2	117VAC	6.3V			E23840			
	②.57A	④6.6A						

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA: ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T3	192Ω	105Ω	C-22446-2	A-8113 ①	A-4000 ①	T80-3 ①	Vert. Block Osc.
T4	420Ω	23Ω Tap	E-23802-1		HV0-6		Horiz. Output
	Tap 41Ω	18Ω					
		SEC. 2					
		0Ω					
T5	1.1KΩ		C-23657		A-3037		Vert. Output
	Tap 10Ω						
T6A	28Ω		AC-23816-2				Horiz. Deflection Coil
B	46Ω		AC-24292 ⑤				Vert. Deflection Coil

① Drill new mounting hole.
⑤ Used in some models.

PARTS LIST CONTINUED ON PAGE 15



CHASSIS BOTTOM VIEW-RESISTOR

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ARVIN	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T7	2.2KΩ	4.3Ω	200Ω	.8Ω	C23490	A-3825	A-3018 ①	R0-2 ①	① Drill new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	ARVIN PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	4.3Ω	AC-23323-1 ② AD-23935-1 ③ AD-23938-1 ④	52574	52A21	② Used in Model 2161 ③ Used in Models 2160, 2164 ④ Used in Model 2162
	CONE DIA.	V. C. DIA.				
SP2	5 1/8"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 cps)	ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	250ADC	43Ω	1.2 Henries	C22561-2	C2326	C-2991	TR3300 ①	① Drill new mtg. hole

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ARVIN PART No.	MEISSNER PART No.	
L2	Ant. Trans.	0Ω	0Ω			High-Band (Part of Tuner Part # AE23054-3)
L3	Ant. Trans.	.1Ω	.1Ω			Low-Band (Part of Tuner Part # AE23054-3)
L4	Grid Choke	.5Ω				Part of Tuner Part # AE23054-3
L5	RF Coil	0Ω				High-Band (Part of Tuner Part # AE23054-3)
L6	RF Coil	0Ω				Low-Band (Part of Tuner Part # AE23054-3)
L7	Osc. Coil	0Ω				High-Band (Part of Tuner Part # AE23054-3)
L8	Osc. Coil	0Ω				Low-Band (Part of Tuner Part # AE23054-3)
L9	RF Choke	.5Ω				Part of Tuner Part # AE23054-3
L10	1st Video IF	.1Ω				Part of Tuner Part # AE23054-3
L11	Fil. Choke	.1Ω				Part of Tuner Part # AE23054-3
L12	Fil. Choke	.1Ω				Part of Tuner Part # AE23054-3
L13	Fil. Choke	.1Ω				Part of Tuner Part # AE23054-3
L14	Fil. Choke	0Ω		A23095		
L15	Fil. Choke	0Ω		A23095		
L16	2nd Video IF	.1Ω		C23614		Includes Trap
L17	Fil. Choke	0Ω		A23095		
L18	3rd Video IF	.1Ω		C23672		Includes Trap
L19	Fil. Choke	0Ω		A23095		
L20	4th Video IF	.1Ω		C23671-1		
L21	5th Video IF	.1Ω		C23671-2		
L22	Peaking	1.6Ω		C22500-6		20 Microhenries (Yellow Dot)
L23	Peaking	8.4Ω		C22500-9		250 Microhenries (Violet Dot-Wound on 47KΩ Resistor)
L24	Peaking	7.9Ω		C22500-3		250 Microhenries (Green Dot)
L25	Peaking	.9Ω		C22500-10		4.5 Microhenries (Approximately)
L26	Peaking	9.5Ω		C22500-11		300 Microhenries (Yellow Dot-Wound on 33KΩ Resistor)
L27	Peaking	1Ω		C22500-12		450 Microhenries (Blue Dot)
L28	Sound IF	1.1Ω		C23093		
L29	Ratio Det. Trans.	5.8Ω	2.1Ω	C23094		
L30	Horiz. Osc. Coil	138Ω	40Ω	D22563		
L31	Width Coil	5.2Ω		C23694		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			ARVIN PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG	1/4A	A-22493		318.250		

MISCELLANEOUS

ITEM No.	PART NAME	ARVIN PART No.	NOTES
M2	RF Tuner	AE23054-3	
M3	Crystal	A23261	Video Det. -(1N-54)
M4	Crystal	A23261	AGC Rectifier -(1N-54)
M5	Switch	A23245	TV-Phono
M6	Switch	A24242	Local-Distant
M7	Switch	A23968	Power Interlock
M8	Ion Trap	C24119-1	
M9	Focus Magnet	C23910-1	
B3, B4	Trimmer	A23130-2	Dual (Horiz. Lock 3-35MMF), (Horiz. Drive 10-160MMF)
	Safety Glass	D23775	
	Escutcheon	C23731-1	Channel Selector
	Knob	D23745-1	Band Change Assembly
	Knob	C23746-3	Channel Selector (Model 2160CB, 2164CB)
	Knob	C23748-1	Channel Selector (Models 2160CM, 2161TM, 2162CCM, 2164CM)
	Knob	C23761-3	Volume (Models 2160CB, 2164CB)
	Knob	C23761-1	Volume (Models 2160CM, 2161TM, 2162CCM, 2164CM)
	Knob	C22686-1	Vertical Hold
	Knob	C22686-2	Horizontal Hold
	Knob	C22686-3	Brightness

PHOTOFACT* Folder

CROSLEY MODELS 11-442MU, 11-445MU, 11-446MU, 11-447MU, 11-453MU, 11-459MIU, MU, 11-460MU, 11-465WU, 11-470BU, 11-472BU, 11-475BU, 11-476BU, 11-477BU, 11-483BU

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MODEL 11-446MU

CROSLEY MODELS 11-442MU, 11-445MU, 11-446MU, 11-447MU, 11-453MU, 11-459MIU, MU, 11-460MU, 11-465WU, 11-470BU, 11-472BU, 11-475BU, 11-476BU, 11-477BU, 11-483BU

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Date 3/51 Set No. 126—Folder No. 4

CROSLEY MODELS 11-442MU, 11-445MU, 11-446MU, 11-447MU, 11-453MU, 11-459MIU, MU, 11-460MU, 11-465WU, 11-470BU, 11-472BU, 11-475BU, 11-476BU, 11-477BU, 11-483BU

CROSLEY MODEL 11-446MU

TRADE NAME	Crosley	Chassis	Models
		321, 321-1, 321-2	11-445MU, 11-447MU, 11-459MIU, MU, 11-465WU, 11-475BU, 11-477BU
		325	11-446MU, 11-476BU
		331	11-442MU, 11-453MU, 11-460MU, 11-470BU, 11-472BU, 11-483BU
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio		
TYPE SET	Television Receiver		
TUBES	Twenty Four		
POWER SUPPLY	110-120 Volts AC - 60 Cycle		
RATING	2.3 Amp. @ 117 Volts AC		
TUNING RANGE	Channels 2 thru 13		

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Tube Placement Chart 5
Voltage And Resistance Measurements 8

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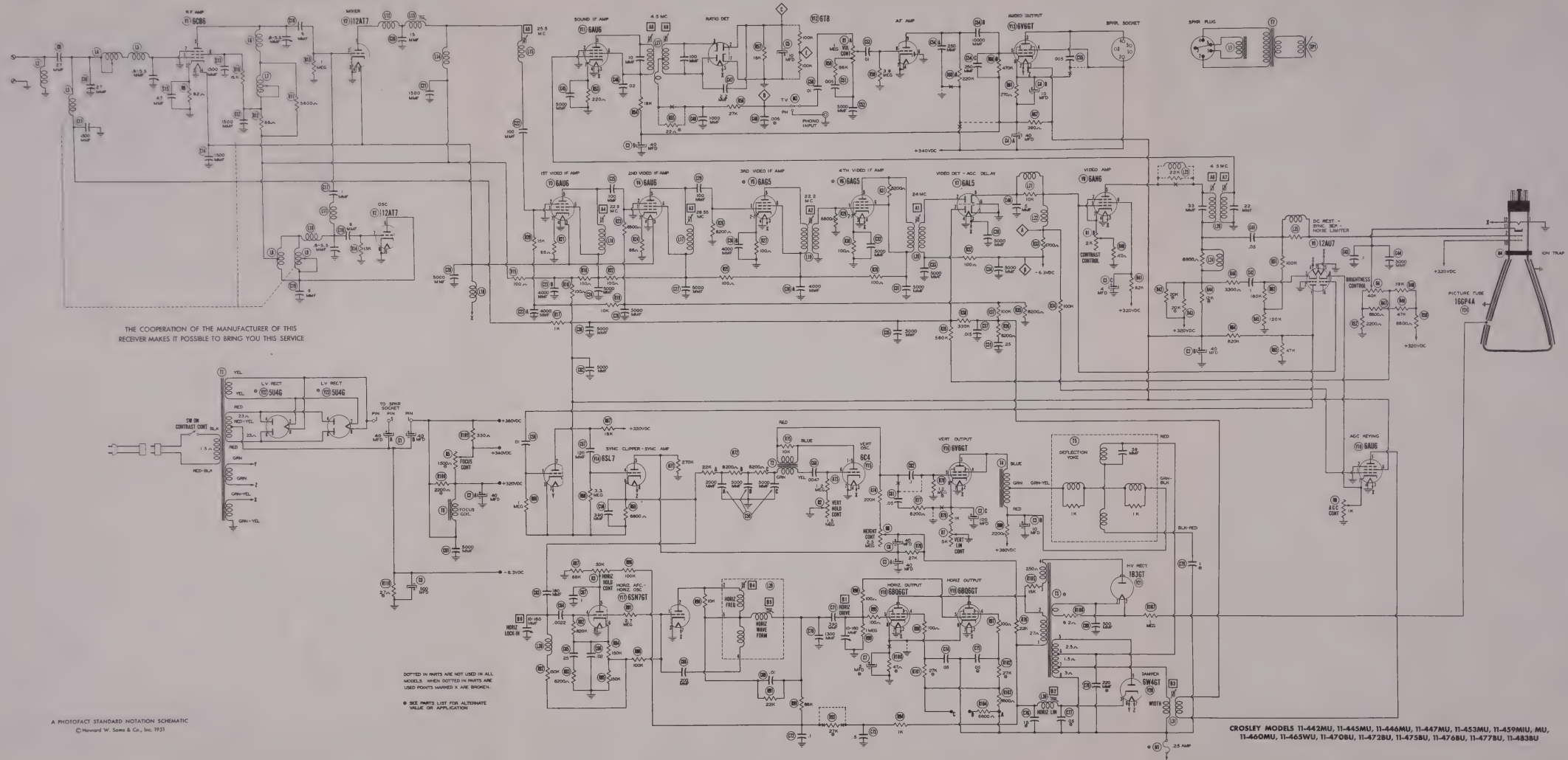
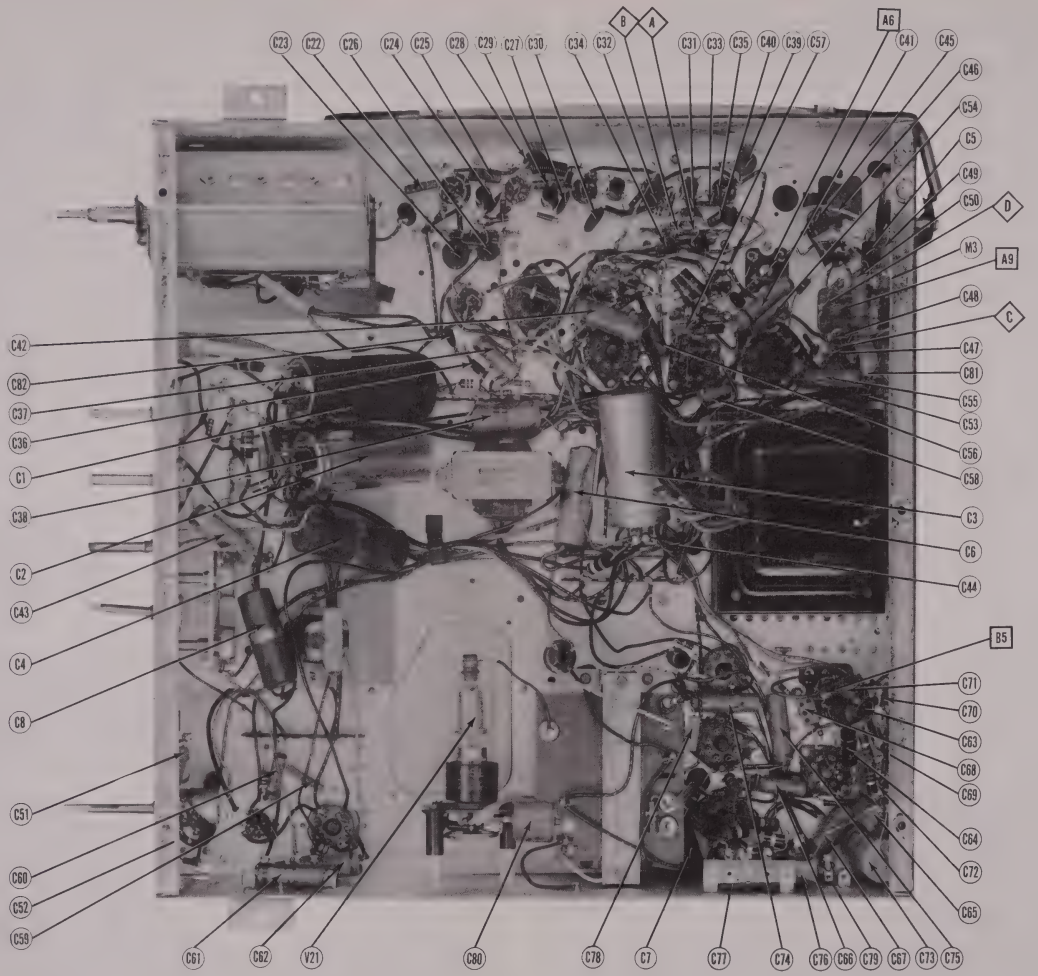
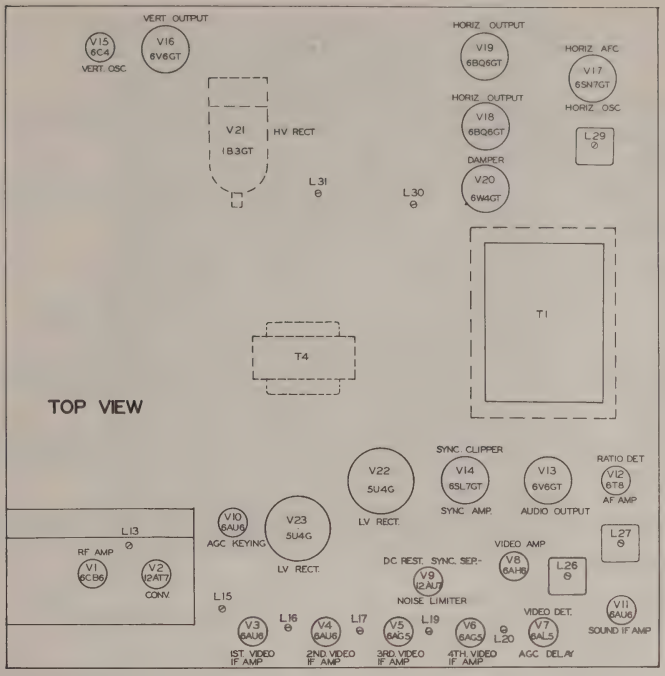


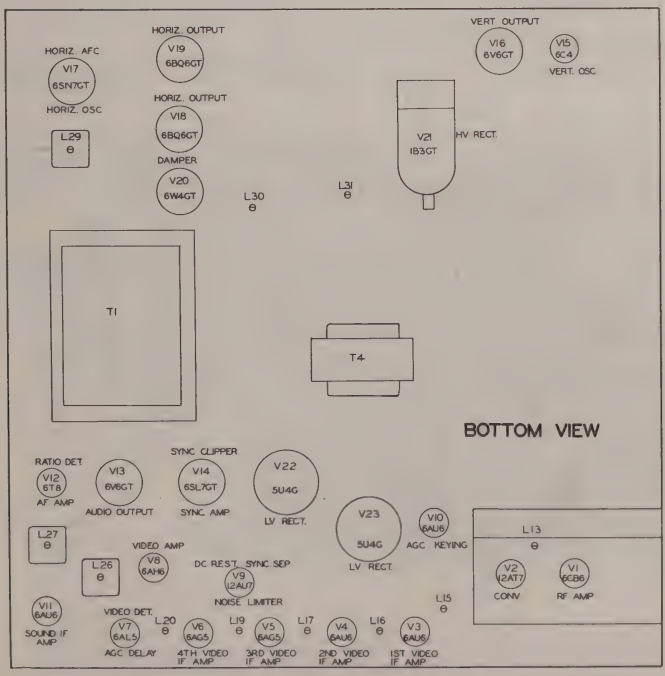
CROSLEY MODELS 11-442MU, 11-445MU, 11-446MU, 11-447MU, 11-453MU, 11-459MIU, MU, 11-460MU, 11-465WU, 11-470BU, 11-472BU, 11-475BU, 11-476BU, 11-477BU, 11-483BU

CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery to the junction of R35 and R37, connect the positive lead to chassis.
During video IF alignment the common lead of the VTVM is connected to -6.3 volts with respect to chassis. Avoid grounding the VTVM case.
Turn the tuner approximately 4 or 5 turns clockwise from fully counter-clockwise, a point which causes no spurious indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	24MC (Unmod.)	See note above	DC probe to Point (A). Common to Point (B).	A1	Adjust for maximum deflection. Attenuate signal generator to maintain 2 volt reading.
2.	"	"	22.2MC	"	"	A2	"
3.	"	"	26.55MC	"	"	A3	"
4.	"	"	22.9MC	"	"	A4	"
5.	"	"	25.5MC	"	"	A5	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
Connect a 10KΩ isolating resistor in series with the vertical input lead of the oscilloscope and a 1000MMF capacitor across the vertical input terminals.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	24MC (10MC SWP)	21.9MC 22.9MC 25.5MC 26.4MC	Point of non-interference	Vert. amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A5 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from Point (C) to chassis. The junction of these two resistors is alignment Point (E) as shown on the schematic.
NOTE: The ratio detector transformers which are coded red or green have secondary (A9) on the top and the primary (A8) on the bottom. Uncoded transformers have the secondary on the bottom and the primary on top.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.001MFD	High side to pin 1 (grid) of 6AH6 (V8). Low side to chassis.	4.5MC (Unmod.)	Any channel not used locally	DC probe to Point (C). Common to chassis.	A6, A7, A8	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to Point (D). Common to Point (E).	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.
See note under SOUND VTVM ALIGNMENT.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.001MFD	High side to pin 1 (grid) of 6AH6 (V8). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any channel not used locally.	Vert. amp. to Point (C). Low side to chassis.	A6, A7, A8	Disconnect stabilizer capacitor C5. Adjust for maximum amplitude and symmetry as per figure 2.
8.	"	"	"	"	"	Vert. amp. to Point (D). Low side to chassis.	A9	Reconnect capacitor C5. Adjust A9 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

THE RF PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION OF THE RECEIVER SHOULD NOT BE REQUIRED IN THE FIELD.

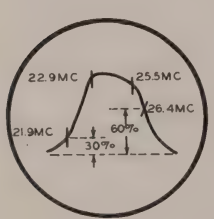


FIG. 1

FIG. 2

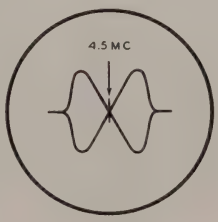
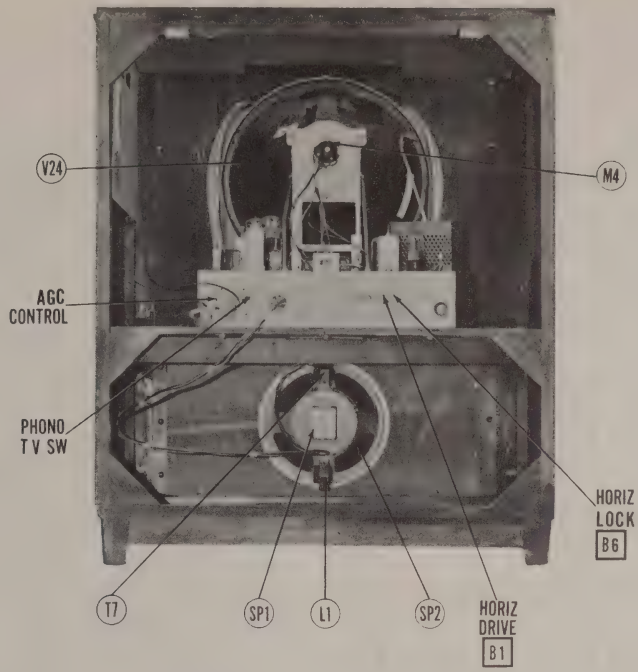
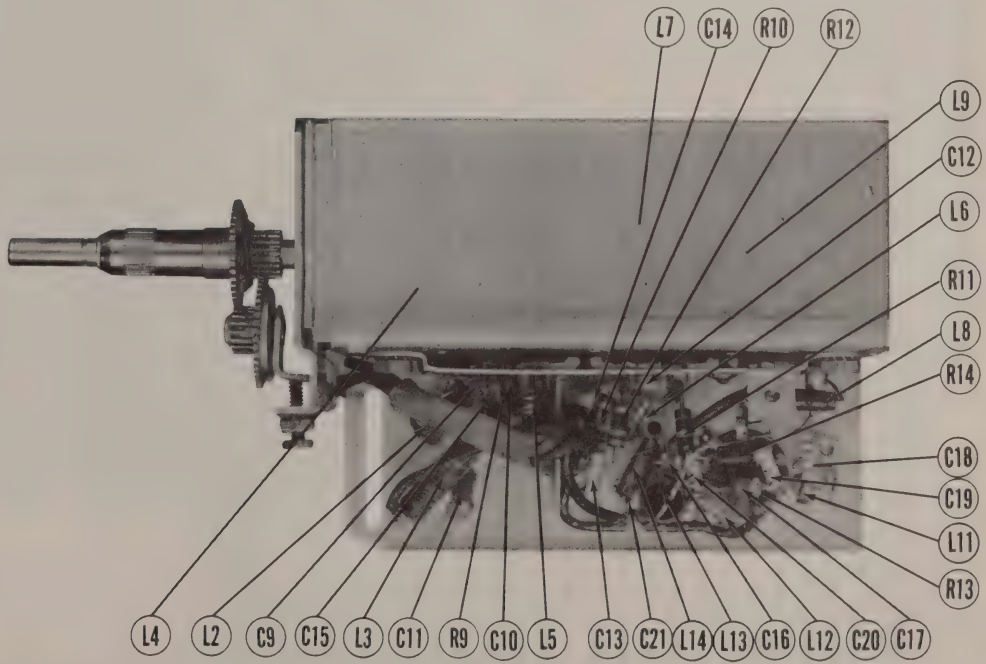


FIG. 3



CABINET-REAR VIEW



RF TUNER

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-.2VDC	.5VDC	0V	6.3VAC	95VDC	75VDC	0V		
V 2	12AT7	95VDC	-2.8VDC	0V	0V	0V	90VDC	§-2.5VDC	0V	6.3VAC
V 3	6AU6	-.2VDC	0V	6.3VAC	0V	95VDC	95VDC	.6VDC		
V 4	6AU6	-.2VDC	0V	6.3VAC	0V	92VDC	92VDC	.6VDC		
V 5	6AG5	0V	.9VDC	6.3VAC	0V	90VDC	90VDC	.9VDC		
V 6	6AG5	0V	.9VDC	0V	6.3VAC	87VDC	87VDC	.9VDC		
V 7	6AL5	0V	-6.5VDC	6.3VAC	0V	-3.5VDC	0V	-.2VDC		
V 8	6AH6	-4VDC	2.2VDC	6.3VAC	0V	250VDC	300VDC	2.2VDC		
V 9	12AU7	5.3VDC	0V	1.4VDC	6.3VAC	6.3VAC	0V	-4VDC	0V	0V
V 10	6AU6	-3.8VDC	0V	6.3VAC	0V	0V	100VDC	0V		
V 11	6AU6	0V	0V	6.3VAC	0V	65VDC	65VDC	1VDC		
V 12	6T8	-.6VDC	-2.3VDC	-.6VDC	0V	6.3VAC	0V	0V	-.4VDC	85VDC
V 13	6V6GT	0V	#6.3VAC	#200VDC	#215VDC	#3.8VDC	#15VDC	#0V	#25VDC	
V 14	6SL7GT	#-.8VDC	#170VDC	#0V	#0V	#300VDC	#3.6VDC	#6.3VAC	#0V	
V 15	6C4	150VDC 390VDC	0V	6.3VAC	0V	150VDC 390VDC	-30VDC -35VDC	0V		
V 16	6V6GT	0V	6.3VAC	310VDC	310VDC	0V	35VDC 0V	0V	40VDC 30VDC	
V 17	6SN7GT	-60VDC	250VDC	0V	-7VDC	215VDC 130VDC	-30VDC	6.3VAC	0V	
V 18	6BQ6GT	0V	6.3VAC	120VDC	120VDC	-18VDC	130VDC	0V	6.4VDC	TOP CAP *
V 19	6BQ6GT	0V	6.3VAC	-18VDC	130VDC	-18VDC	520VDC	0V	6.4VDC	TOP CAP *
V 20	6W4GT	0V	320VDC	520VDC	0V	320VDC	0V	#0V	#6.3VAC	
V 21	1B3GT	* DO NOT MEASURE								
V 22	5U4G	0V	380VDC	0V *	330VAC	0V	330VAC	100VDC	380VDC	
V 23	5U4G	0V	380VDC	320VDC	330VAC	0V	330VAC	370VDC	380VDC	
V 24	16GP4A	0V	.3VDC	PIN 10 330VDC	PIN 70VDC	11: 20VDC	PIN 12 6.3VAC			

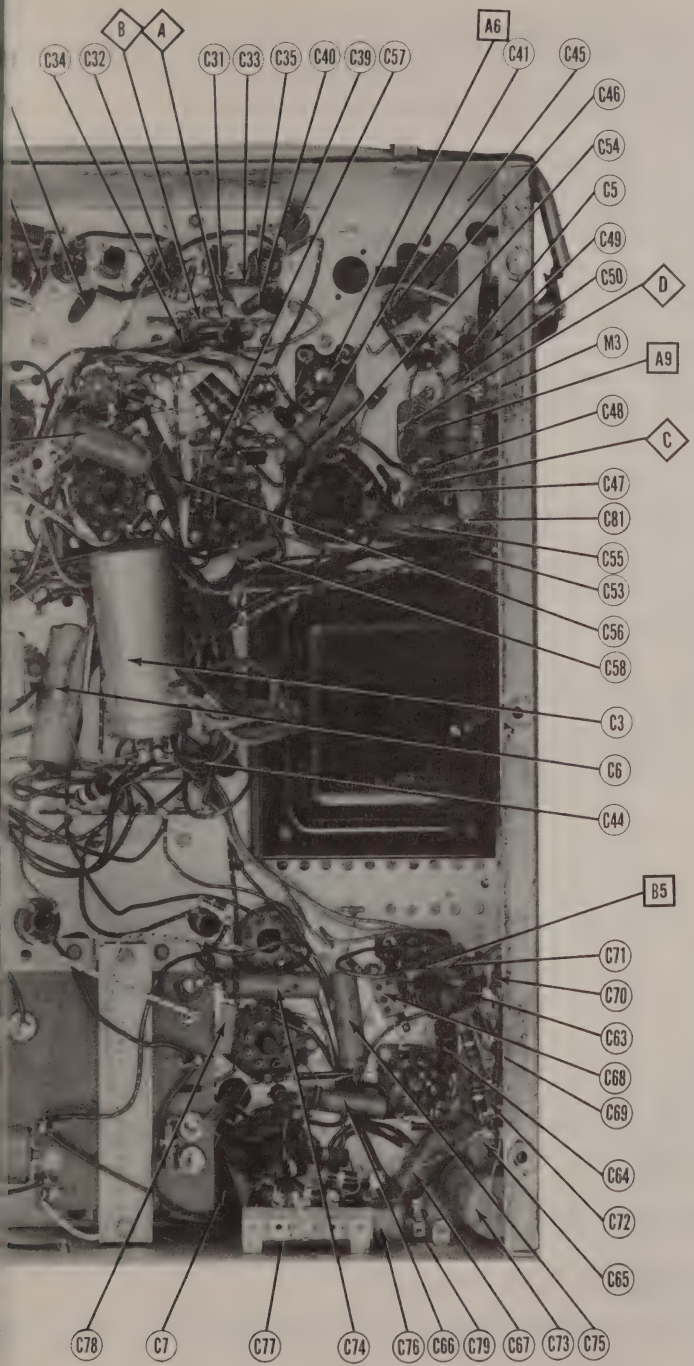
FOCUS CONTROL COUNTER CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
# MEASURED FROM JUNCTION OF C2B AND R62

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	270KΩ	82Ω	0Ω	.1Ω	#270Ω	#15KΩ	0Ω		
V 2	12AT7	#200Ω	1Meg	0Ω	0Ω	0Ω	#200Ω	15KΩ	0Ω	.1Ω
V 3	6AU6	35KΩ	0Ω	.1Ω	0Ω	#200Ω	#200Ω	68Ω		
V 4	6AU6	15KΩ	0Ω	.1Ω	0Ω	#300Ω	#300Ω	68Ω		
V 5	6AG5	8.2KΩ	100Ω	.1Ω	0Ω	#400Ω	#400Ω	100Ω		
V 6	6AG5	.6Ω	100Ω	0Ω	.1Ω	#500Ω	#500Ω	100Ω		
V 7	6AL5	0Ω	130Ω	.1Ω	0Ω	4.7KΩ	0Ω	270KΩ		
V 8	6AH6	4.7KΩ	2KΩ	.1Ω	0Ω	†10KΩ	†82KΩ	2KΩ		
V 9	12AU7	47KΩ	0Ω	300KΩ	.1Ω	.1Ω	Inf.	4.7KΩ	1KΩ 0Ω	0Ω
V 10	6AU6	105KΩ	0Ω	.1Ω	0Ω	110KΩ	#0Ω	1KΩ 0Ω		
V 11	6AU6	2.4Ω	0Ω	.1Ω	0Ω	#18KΩ	#18KΩ	220Ω		
V 12	6T8	Inf.	18KΩ	Inf.	0Ω	.1Ω	0Ω	0Ω	3.9Meg	†221ΩKΩ
V 13	6V6GT	Inf.	#.1Ω	†610Ω	†250Ω	#470KΩ	#390Ω	#0Ω	#660Ω	
V 14	6SL7GT	#1Meg	†18KΩ	#0Ω	#3.3Meg	▲45KΩ	#6.8KΩ	#.1Ω	#0Ω	
V 15	6C4	▲250KΩ ▲2.8Meg	Inf.	.1Ω	0Ω	▲250KΩ ▲2.8Meg	1.2Meg 2.7Meg	0Ω		
V 16	6V6GT	Inf.	.1Ω	†3.3KΩ	†3.3KΩ	1.2Meg	5KΩ 0Ω	0Ω	6KΩ 1KΩ	
V 17	6SN7GT	250KΩ	▲95KΩ	0Ω	900KΩ	▲90KΩ ▲110KΩ	300KΩ	.1Ω	0Ω	
V 18	6BQ6GT	Inf.	.1Ω	†35KΩ	†35KΩ	1Meg	†35KΩ	0Ω	47Ω	TOP CAP ▲35Ω
V 19	6BQ6GT	Inf.	.1Ω	1Meg	†35KΩ	1Meg	▲0Ω	0Ω	47Ω	TOP CAP ▲35Ω
V 20	6W4GT	Inf.	†250Ω	100KΩ	Inf.	†250Ω	Inf.	#0Ω	#.1Ω	
V 21	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲15KΩ
V 22	5U4G	Inf.	35KΩ	0Ω	55Ω	Inf.	55Ω	#0Ω	35KΩ	
V 23	5U4G	Inf.	35KΩ	†2.2KΩ	55Ω	Inf.	55Ω	†50Ω	35KΩ	
V 24	16GP4A	0Ω	220KΩ	PIN 10 †250Ω	PIN 14KΩ	11 2.2KΩ	PIN 12 .1Ω			

FOCUS CONTROL COUNTER CLOCKWISE
MEASURED FROM JUNCTION OF C2B AND R62
† MEASURED FROM PIN 8 OF V23
▲ MEASURED FROM PIN 3 OF V20

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



AND ALIGNMENT IDENTIFICATION

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL DRIVE ADJUSTMENT

Due to the use of two horizontal output tubes connected in parallel, the horizontal drive adjustment becomes more critical than the case where only one output tube is used.

It is recommended that if one of the output tubes is replaced, both be replaced and checked to see that each tube draws the same plate current. If possible try several combinations of tubes to match the plate currents as closely as possible.

The drive trimmer (B1) should be readjusted if the tubes are changed.

To adjust the drive trimmer, turn the trimmer counter-clockwise until the picture width begins to decrease, or until crowding occurs in the center of the picture, whichever occurs first.

Check to see if the horizontal linearity in the center of the picture changes with the contrast control setting. If it does, turn the trimmer clockwise just far enough to eliminate the change in linearity as the contrast control is changed.

The point of best horizontal linearity coincides with the point of least plate dissipation of the horizontal output tubes, and this linearity with the horizontal linearity slug (B2) as far out of the coil as possible. If the horizontal linearity adjustment is changed, it will be necessary to readjust the drive trimmer (B1). Adjust the width slug (B3) until the picture fills the mask horizontally. If proper width cannot be obtained by properly adjusting B1 and B3, change the screen voltage on the output tubes by changing the tap on the terminal strip near the horizontal output tubes, on the underside of the chassis.

HORIZONTAL OSCILLATOR ALIGNMENT

Tune in a TV station and set the contrast control for a normal picture.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug (B4) until the picture synchronizes horizontally.

Connect the vertical input lead of an oscilloscope thru a 10MMF capacitor to terminal 5 of L29, low side to chassis.

Adjust the waveform slug (B5) until the broad and narrow peaks of the waveform on the scope are of equal height as shown in figure 4. If necessary during adjustment of B5, adjust B4 to keep the picture synchronized.

Turn the horizontal hold control to maximum clockwise.

Adjust B4 counter-clockwise until the picture is out of sync and shows 1 vertical bar.

Turn the hold control to maximum counter-clockwise, the picture should remain in sync.

Momentarily interrupt the signal by tuning to another channel and back again. The picture will be out of sync and show a number of bars sloping downward to the right. If more than 7 bars are present adjust the horizontal lock trimmer (B6) slightly counter-clockwise. If less than 5 bars are present adjust B6 slightly clockwise. Repeat the adjustment of B4 and the lock in check.

The lock-in range of the horizontal hold control should be between 120 degrees and 220 degrees of rotation of the control.

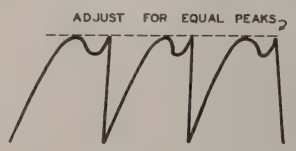


FIG. 4

AGC ADJUSTMENT

Tune in a weak station and turn the contrast control to maximum.

Adjust the AGC adjustment until the picture just begins to overload.

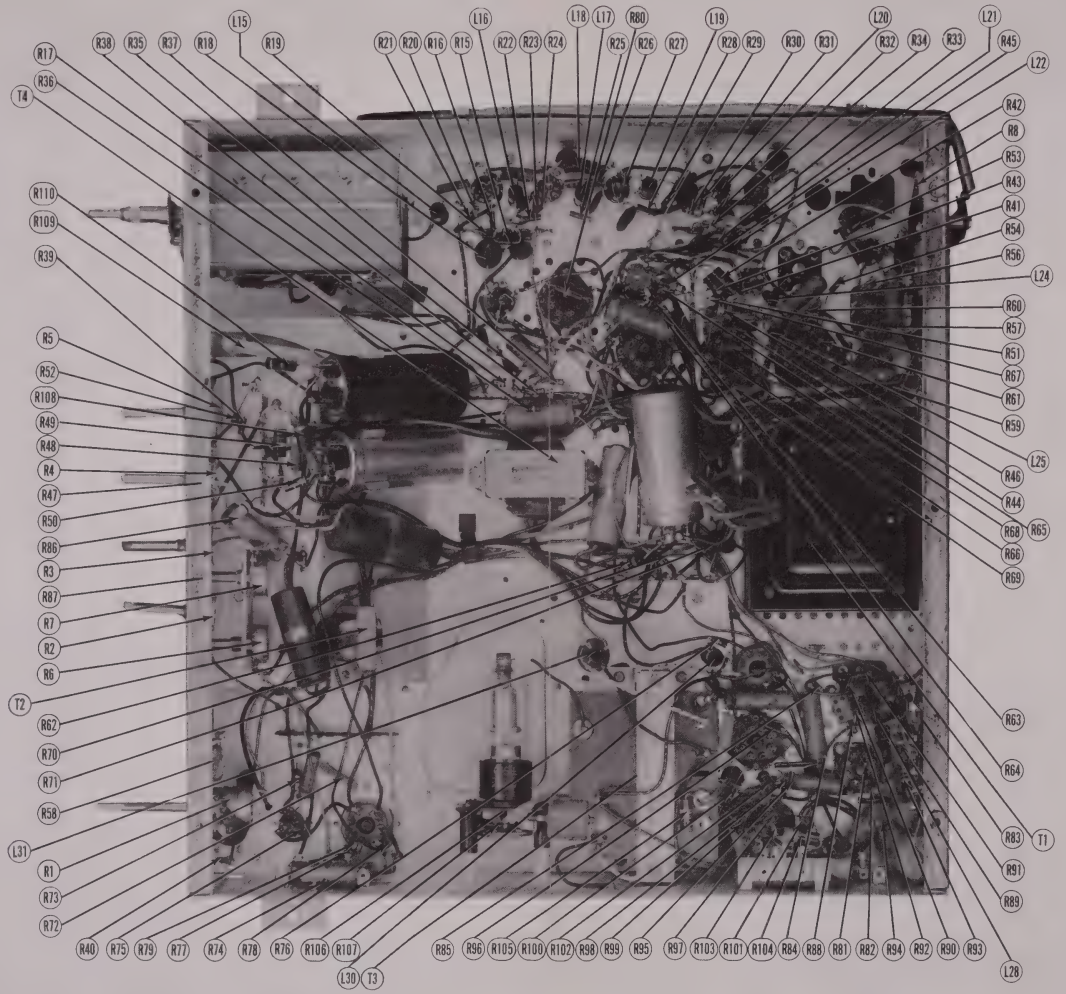
DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove four control knobs and channel pointer.
2. Remove six wood screws holding rear cover in place. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect speaker.
5. Remove five 7/16" hex head bolts holding chassis in cabinet.
6. Remove four 1/4" hex head nuts from speaker. Remove speaker.

PICTURE TUBE REMOVAL

1. Remove four phillips head screws holding front mask in place. Remove mask.
2. Remove rear cover.
3. Remove picture tube socket, ion trap and H.V. lead.
4. Remove metal strap around top of picture tube.
5. Remove picture tube.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6CB6	6CB6	7C/M	
V2	Converter	12AT7	12AT7	9A	
V3	1st Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd Video IF Amp.	6AU6	6AU6	7BK	
V5A	3rd Video IF Amp.	6AG5	6AG5	7BD	
B	3rd Video IF Amp.	6AU6	6AU6	7BK	
C	3rd Video IF Amp.	6BC5	6BC5	7BD	
V6A	4th Video IF Amp.	6AG5	6AG5	7BD	
B	4th Video IF Amp.	6BC5	6BC5	7BD	
V7	Video Det. -AGC Delay	6AL5	6AL5	6BT	
V8	Video Amp.	6AH6	6AH6	7BK	
V9	DC Rest. -Sync. Sep. -Noise Limiter	12AU7	12AU7	9A	
V10	AGC Keying	6AU6	6AU6	7BK	
V11	Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Det. -AF Amp.	6T8	6T8	9E	
V13	Audio Output	6V6GT	6V6GT	7AC	
V14	Sync. Clipper-Sync. Amp.	6SL7GT	6SL7GT	8BD	
V15	Vert. Oscillator	6C4	6C4	6BG	
V16	Vert. Output	6V6GT	6V6GT	7AC	
V17	Hor. AFC -Hor. Osc.	6SN7GT	6SN7GT	8BD	
V18	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V19	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V20	Damper	6W4GT	6W4GT	4CG	
V21	H. V. Rectifier	1B3GT	1B3GT	3C	
V22A	L. V. Rectifier	5U4G	5U4G	5T	
B	L. V. Rectifier	6U4G	6U4G	4CG	
V23A	L. V. Rectifier	5U4G	5U4G	5T	
B	L. V. Rectifier	6U4G	6U4G	4CG	
V24A	Picture Tube	16GP4A	16GP4A	12D	
B	Picture Tube	16TP4	16TP4	12D	
C	Picture Tube	17BP4	17BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	B-146633	AF88K		UP4450		TVL-2830	▲ Filter
B	40	475							▲ Filter
C2A	40	475	B-148429	AF8X8I		UPT303		TVL-3840	▲ Filter
B	40	250		PR850/100				TVA-1301	■ Decoupling
C	100	50							▲ Vert. Output Cath.
C3A	40	475	B-149106	AF82X1H8G				TVL-4830	▲ Decoupling
B	10	475						TVA-1608	■ Vert. Output Dec.
C	4	350							▲ V. Amp. Screen Decoupling
D	40	300							
C4A	40	300	B-149261	PR8450/40		UP4035C		TVA-1611	Decoupling - Red
B	10	25		PR825/10				TVA-1204	Output Cath. - Yellow
C5	10	25	B-149211	PR825/10		BR102A		TVA-1204	Stabilizing Cap
C6	40	100	B-149262	PR8150/40		BR4015A		TVA-1413	Vert. Osc. Dec.
C7	5	25	B-146944	PR8150/4		BR550		TVA-1203	Hor. Output Cath. *
C8	500	10	B-149038	PR812/500		BRH125A		TVA-1132	Bias Filter
C9	27		C-137727-49				N080-338-27		RF Coupling
C10	27		C-137727-49				N080-338-27		Fixed Trimmer
C11	1500		C-137727-113	SI1500	D6-152		GP2L-0015	19C20	AGC Filter
C12	1500		C-137727-113	SI1500	D6-152		GP2L-0015	19C20	RF Amp. Dec.
C13	1500		C-137727-113	SI1500	D6-152		GP2L-0015	19C20	RF Amp. Screen
C14	1500		C-137727-113	SI1500	D6-152		GP2L-0015	19C20	RF Amp. Filament
C15	4.7		W-137398-6	SI4.7NPO	TCZ-4.7		NPOK-4.7		RF Amp. Cathode
C16	6		C-137727-106				N330K-6		RF Coupling
C17	1		W-137398-2		TCZ-1				Osc. Coupling
C18	6		C-137727-106				N330K-6		Osc. Grid Cap
C19	6		C-137727-106				N330K-6		Fixed Trimmer
C20	15		C-137727-41		TCN-15		N750K-15	19C6	Fixed Trimmer
C21	1500		C-137727-113	SI1500	D6-152		GP2L-0015	19C20	RF Bypass
C22	100		C-137727-108	SI100	D6-101	5W5T1	GP1K-100	19C11	IF Coupling
C23A	4000		C-144675-6	BPD-2X004	DD-2-502	1D5D4	822-2X004	36C2	AGC Filter
B	4000					1D5D4			RF Bypass
C24	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	1st V. IF Dec.
C25	100		C-137727-108	SI100	D6-101	5W5T1	GP1K-100	19C11	IF Coupling
C26	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	AGC Filter
C27	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	2nd V. IF Dec.
C28	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	2nd V. IF Fil.
C29	100		C-137727-108	SI100	D6-101	5W5T1	GP1K-100	19C11	IF Coupling
C30A	4000		C-144675-6	BPD-2X004	DD-2-502	1D5D4	822-2X004	36C2	3rd V. IF Dec.
B	4000					1D5D4			3rd V. IF Cathode
C31	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	4th V. IF Dec.
C32	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	4th V. IF Cathode
C33	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	RF Bypass
C34	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	RF Bypass
C35	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	AGC Filter
C36	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	AGC Filter
C37	.015	200	39001-14	P288-015		PTE6515		6TM-S15	AGC Filter
C38	.25	200	39001-87	P488-25		GT2P25		2TM-P25	AGC Filter
C39	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	V. Det. -DAGC Fil.
C40	5		C-137727-103	SI5	TCZ-4.7	5W5V5	GP1K-5	MS-55	V. Diode Filter
C41	.05	400	39001-17	P488-05	DF-503	PTE455		4TM-S5	Video Coupling
C42	.1	400	39001-19	P488-1	DF-104	PTE4P1		4TM-P1	Video Coupling
C43	.1	200	39001-19	P288-1	DF-104	PTE4P1		2TM-P1	Pic. Tube Cath.
C44	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	Pic. Tube Cath.
C45	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	S. IF Cath.
C46	.02	400	39001-80	P488-02	DF-203	PTE482		4TM-S2	S. IF Dec.
C47	2.2		W-137398-4		TCZ-2.2				Balancing
C48	1000		C-137727-110	SI1000	D6-102	1W5D1	GP2L-001	19C1	Diode Load Cap
C49	.005	600		P688-005	D6-502	PTE6D5	811-005	6TM-D5	De-emphasis See Note 1.
C50	.01	400	39001-13	P488-01	D6-103	PTE481	821-01	4TM-S1	Audio Coupling
C51	.005	600	39001-11	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Tone Comp.
C52	5000		C-144675-2	BPD-005	DD-502	1D5D5	811-005	29C1	RF Bypass
C53	.01	400	39001-13	P488-01	D6-103	PTE481	821-01	4TM-S1	Audio Coupling

CAPACITO

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEME: CROSLEY PART No.	REPLACEME: AEROVOX PART No.	REPLACEME: CENTRAL PART N
C54A	250		†W-149881	SI250	†
B	10000			BPD-01	PC-81
C	250				
C55	.005	600	39001-11	P688-005	D6-502
C56	.01	400	39477-41	P488-01	D6-103
C57	120	500	B-137498-17	SI120	D6-120
C58	390	500	B-137498-28	1469-0004	D6-391
C59A	2000		†W-149878	P688-002	†
B	5000			P688-005	PC-100
C	5000			P688-005	
C60	.0047	600	39478-39	P688-0047	D6-472
C61	.05	400	C-146434-6	P488-05	
C62	.1	400	39001-19	P488-1	DF-104
C63	180	500	B-137498-24	1469-0002	D6-181
C64	.0022	600	39477-37	P688-0022	D6-222
C65	.25	200	39001-87	P488-25	
C66	.02	200	39001-80	P488-02	DF-203
C67	.1	400	39001-17	P488-1	DF-104
C68	200	1000	B-137498-47	1469-HV-0002	
C69	.01	400	C-148813-2	P488-01	
C70	1300	500	B-137498-53		
C71	390	500	B-137498-56	1469-0004	D6-391
C72	.1	600	B-148317-3	P688-1	DF-104
C73	.5	600	B-148317-2	684-5	
C74	.05	400	39001-17	P488-05	DF-503
C75	.05	400	39001-17	P488-05	DF-503
C76	.15	400	C-146434-10	P488-15	
C77	.05	400	C-146434-6	P488-05	
C78	220	2000	B-137498-62		
C79	.1	200	B-149488-1	P288-1	DF-104
C80	500	20000	W-147375	HV20B	TV1-502
C81	5000		C-144675-2	BPD-005	DD-502
C82	5000		C-144675-2	BPD-005	DD-502

* Not used in all models.
† Items C54A, C54B, C54C, R60A and R60B are combined
‡ Items C59A, C59B, C59C R72A, R72B and R72C are com
§ Not used in chassis 321 and 331.
♦ Chassis 321 and 331 uses .1MFD. in this application. Mfg
■ Chassis 321 and 331 uses .15MFD. in this application. M
¶ Chassis 321 and 331 uses .2MFD. in this application. M
Note 1. Some models use .002MMF. in this application. M

CONT

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROS PART N
R1A	1Meg	½	C-149220		
B	2000Ω	½			RTV-245
R2A	1.5Meg	½	B-148952	Q11-138	AG-83-5
B	Shaft		Not req.	Not req.	RS-2
R3A	50KΩ	½	B-148953	Q11-123	AG-44-8
B	Shaft		Not req.	Not req.	RS-2
R4A	40KΩ	½	B-148966	Q11-123	AG-43-8
B	Shaft		Not req.	Not Req.	RS-2
R5	1500Ω	4	B-149883		RTV-205
R6A	2.5Meg	½	B-148964	Q11-239	AG-84-8
B	Shaft		Not req.	RQ	FKS-1/4
R7A	5000Ω	½	B-148965	Q11-114	AG-19-8
B	Shaft		Not req.	RQ	FKS-1/4
R8	1000Ω	1	W-148881	Q11-108	

Note 1. Chassis 321 uses control with part number B-1489

RES

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.
R9	82Ω	½	39374-12	BTS-82
R10	15KΩ	½	39374-39	
R11	5600Ω	½	39374-34	
R12	68Ω	½	39374-11	
R13	1Meg	½	39374-61	
R14	15KΩ	½	39374-39	
R15	100Ω 20%	½	39373-14	BTS-100
R16	100Ω 20%	½	39373-14	BTS-100
R17	1000Ω	½	39373-33	BTS-1000
R18	100Ω 20%	½	39373-14	BTS-100
R19	10KΩ 20%	½	39373-54	BTS-10K
R20	15KΩ 5%	½	39375-77	
R21	68Ω	½	39374-11	
R22	100Ω 20%	½	39373-14	BTS-100
R23	6800Ω 5%	½	39375-69	
R24	68Ω	½	39374-11	
R25	100Ω 20%	½	39373-14	BTS-100
R26	8200Ω 5%	½	39375-71	
R27	100Ω	½	39374-13	BTS-100
R28	100Ω 20%	½	39373-14	BTS-100
R29	6800Ω 5%	½	39375-69	
R30	100Ω	½	39374-14	BTS-100
R31	8200Ω 5%	½	39375-71	
R32	100Ω 20%	½	39373-14	BTS-100
R33	4700Ω 5%	½	39375-65	BTS-4700-5%
R34	100KΩ	½	39374-49	BTS-100K
R35	8200Ω 5%	½	39375-71	BTS-8200-5%
R36	8200Ω	½	39374-71	BTS-8200
R37	100KΩ	½	39374-49	BTS-100K
R38	330KΩ 5%	½	39375-109	BTS-330K-5%
R39	560KΩ 5%	½	39375-115	BTS-560K-5%
R40	47Ω	½	39374-9	BW-½-47
R41	82KΩ	1	39374-136	BTA-82K
R42	20KΩ 5%	2		
R43	20KΩ 5%	2		
R44	12KΩ 5%	1		BTA-12K-5%
R45	120KΩ	½	39374-50	BTS-120K
R46	3300Ω	½	39374-31	BTS-3300
R47	6800Ω	1	39374-123	BTA-6800
R48	39KΩ	2	39374-222	BTB-39K
R49	47KΩ	2	39374-231	BTB-47K

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6CB6	6CB6	7C/M	
V2	Converter	12AT7	12AT7	9A	
V3	1st Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd Video IF Amp.	6AU6	6AU6	7BK	
V5A	3rd Video IF Amp.	6AG5	6AG5	7BD	
B	3rd Video IF Amp.	6AU6	6AU6	7BK	
C	3rd Video IF Amp.	6BC5	6BC5	7BD	
V6A	4th Video IF Amp.	6AG5	6AG5	7BD	
B	4th Video IF Amp.	6BC5	6BC5	7BD	
V7	Video Det. -AGC Delay	6AL5	6AL5	6BT	
V8	Video Amp.	6AB8	6AB8	7BK	
V9	DC Rest. -Sync. Sep. -Noise Limiter	12AU7	12AU7	9A	
V10	AGC Keying	6AU6	6AU6	7BK	
V11	Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Det. -A.F Amp.	6T8	6T8	9E	
V13	Audio Output	6V6GT	6V6GT	7AC	
V14	Sync. Clipper-Sync. Amp.	6SL7GT	6SL7GT	8BD	
V15	Vert. Oscillator	6C4	6C4	6BG	
V16	Vert. Output	6V6GT	6V6GT	7AC	
V17	Horz. A.FC -Horz. Osc.	6SN7GT	6SN7GT	8BD	
V18	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V19	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V20	Damper	6W4GT	6W4GT	4CG	
V21	H.V. Rectifier	1B3GT	1B3GT	3C	
V22A	L.V. Rectifier	5U4G	5T	5T	
B	L.V. Rectifier	5U4G	6U4G	4CG	
V23A	L.V. Rectifier	5U4G	5U4G	5T	
B	L.V. Rectifier	6U4G	6U4G	4CG	
V24A	Picture Tube	16GP4A	16GP4A	12D	
B	Picture Tube	16TP4	16TP4	12D	
C	Picture Tube	17BP4	17BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	B-146633	AF88K		UP4450		TVL-2830	▲ Filter
B	40	475							▲ Filter
C2A	40	475	B-148429	AF8X81		UPT303		TVL-3840	▲ Filter
B	40	250		PR850/100				TVA-1301	■ Decoupling
C	100	50							■ Vert. Output Cath.
C3A	40	475	B-149106	AF82X1B8G				TVL-4830	● Decoupling
B	10	475						TVA-1606	● Vert. Output Dec.
C	40	350							▲ V. Amp. Screen Decoupling
D	40	300							Decoupling - Red
C4A	40	300	B-149261	(PR2450/40		UP4035C		TVA-1611	Decoupling - Yellow
B	10	25		PR325/10				TVA-1204	Output Cath. - Yellow
C5	10	25	B-149211	PR325/10		BR102A		TVA-1204	Stabilizing Cap
C6	40	100	B-149262	PR2150/40		BR4035A		TVA-1403	Vert. Osc. Dec.
C7	5	25	B-149244	PR2150/4		BR550		TVA-1203	Hor. Output Cath. ★
C8	500	10	B-149238	PR812/500		BRH254		TVA-1132	Bias Filter
C9	27		C-137727-49				N080-358-27		RF Coupling
C11	1500		C-137727-113	SIL500	D6-152		N080-358-27		Fixed Trimmer
C12	1500		C-137727-113	SIL500	D6-152		GP2L-0015	19C20	RF Amp. Dec.
C13	1500		C-137727-113	SIL500	D6-152		GP2L-0015	19C20	RF Amp. Screen
C14	1500		C-137727-113	SIL500	D6-152		GP2L-0015	19C20	RF Amp. Filament
C15	4.7		W-137398-6	SI4.7NPO	TCZ-4.7		NPOK-4.7		RF Coupling. Cathode
C16	6		C-137727-106				N330K-6		RF Coupling
C17	1		W-137398-2		TCZ-1				Osc. Coupling
C18	6		C-137727-106				N330K-6		Osc. Grid Cap
C19	6		C-137727-106				N330K-6		Fixed Trimmer
C20	15		C-137727-41		TCN-15		N750K-15	19C6	Fixed Trimmer
C21	1500		C-137727-113	SIL500	D6-152		GP2L-0015	19C20	RF Bypass
C22	100		C-137727-106	SIL00	D6-101	5W5TI	GP1K-100	19C11	IF Coupling
C23A	4000		C-144675-6	BPD-2X004	DD-2-502	1D5D4	822-2X004	36C3	AGC Filter
B	4000					1D5D4			RF Bypass
C24	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	1st V. IF Dec.
C25	100		C-137727-106	SIL00	D6-101	5W5TI	GP1K-100	19C11	IF Coupling
C26	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	AGC Filter
C27	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	2nd V. IF Dec.
C28	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	2nd V. IF Fil.
C29	100		C-137727-106	SIL00	D6-101	5W5TI	GP1K-100	19C11	IF Coupling
C30A	4000		C-144675-6	BPD-2X004	DD-2-502	1D5D4	822-2X004	36C3	3rd V. IF Dec.
B	4000					1D5D4			3rd V. IF Cathode
C31	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	4th V. IF Dec.
C32	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	4th V. IF Cathode
C33	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	RF Bypass
C34	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	RF Bypass
C35	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	AGC Filter
C36	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	AGC Filter
C37	.015	200	3900I-14			PTE8815		27M-P25	AGC Filter
C38	.25	200	3900I-87			GP2P25		27M-P25	V. Det. -DAGC Fil.
C39	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	V. Diode Filter
C40	5		C-137727-103	SI5	TCZ-4.7	5W5VS	GP1K-5	MS-55	Video Coupling
C41	.05	400	3900I-17	P488-1	DF-104	PTE4P5		47M-E5	Video Coupling
C42	.1	400	3900I-19	P488-1	DF-104	PTE4P1		47M-P1	Pic. Tube Cath.
C43	.1	200	3900I-19	P288-1	DF-104	PTE4P1		27M-P1	Pic. Tube Cath.
C44	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	S. IF Cath.
C45	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	S. IF Dec.
C46	.02	400	3900I-80	P488-02	DF-203	PTE4S2		47M-S2	Balancing
C47	2.2		W-137398-4		TCZ-2.2				Diode Load Cap
C48	1000		C-137727-110	SI1000	D6-102	1W5DI	GP2L-001	19C1	De-emphasis See Note 1.
C49	.005	600		P488-005	D6-502	PTE8D5	81L-005	47M-D5	Audio Coupling
C50	.01	400	3900I-13	P488-01	D6-103	PTE4S1	821-01	47M-S1	Tone Comp.
C51	.005	600	3900I-11	P488-005	D6-502	PTE8D5	81L-005	47M-D5	RF Bypass
C52	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	Audio Coupling
C53	.01	400	3900I-13	P488-01	D6-103	PTE4S1	821-01	47M-S1	

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C54A	250		†W-149881	SI250	†	5W5T25	GP2K-250	19C13	AF Amp. Plate
B	10000			BPD-03	PC-81	PTE8S1	821-01	47M-S1	Audio Coupling
C	250								Output Grid
C55	.005	600	3900I-11	P588-005	D6-502	PTE8D5	81L-005	47M-D5	Output Plate
C56	.01	400	3900I-13	P488-01	D6-103	PTE4S1	821-01	47M-S1	Sync. Coupling
C57	120	500	B-137498-17		DD-120	5R5T15	GP2K-120	19C29	Sync. Coupling
C58	390	500	B-137498-28	P488-039	D6-391	5R5T4	GP2K-390	MS-34	Sync. Amp. Cath.
C59A	2000		†W-149878	P588-002	†	PTE8D2	GP3M-003	47M-D2	Integrator Net
B	5000			P888-005	PC-100	PTE8D5	81L-005	47M-D5	Integrator Net
C	5000			P588-005		PTE8D5	81L-005	47M-D5	Integrator Net
C60	.0047	600	3947B-39	P588-0047	DE-472	PTE8D5	GP4M-0047	Vert. Osc. Grid	
C61	.05	400	C-146434-8	P488-05		PTE4S5		47M-S5	Vert. Discharge
C62	.1	400	3900I-19	P488-1	DF-104	PTE4P1		47M-P1	Vert. Sweep Coupling
C63	.180		B-137498-24	1469-0002	D6-181	5R5T2	GP2K-180	MS-32	Horz. Sync. Coupling
C64	.0022	600	3947T-37	P588-0022	D6-222	PTE8D2	GP1M-0022	47M-D22	Horz. Sync. Coupling
C65	.25	200	3900I-87	P488-25		GT2P25		27M-P25	AFC Filter
C66	.02	200	3900I-80	P488-02	DF-203	PTE4S2		27M-S2	AFC Filter
C67	.1	400	3900I-17	P488-1	DF-104	PTE4P1		47M-P1	Hor. AFC Filter
C68	200	450	B-137498-47	1469-HV-0002					Hor. Osc. Grid
C69	.01	400	C-148813-2	P488-01		PTE4S1		47M-S1	Fixed Trimmer
C70	1500	500	B-137498-53						Hor. Discharge
C71	390	500	B-137498-58	1469-0004	D6-391	5R5T4	GP2K-390	MS-34	Hor. Sweep Coupling
C72	.1	600	B-148317-3	P588-1	DF-104	PTE8P1		67M-P1	Decoupling
C73	.5	600	B-148317-2	584-5		GT6P5			Decoupling
C74	.05	400	3900I-17	P488-05	DF-503	PTE4S5		47M-S5	Hor. Output Screen
C75	.05	400	3900I-17	P488-05	DF-503	PTE4S5		47M-S5	Hor. Output Screen ‡
C76	.15	400	C-146434-10	P488-15				47M-P15	Damper Filter
C77	.05	400	C-146434-8	P488-05		PTE4S5		47M-S5	Damper Filter ¶
C78	220	2000	B-137498-62						Fixed Trimmer ‡
C79	.1	200	B-137498-61	P288-1	DF-104	PTE4P1		27M-P1	Hor. Sweep Coupling ¶
C80	500	20000	W-147375	HV20B	TV1-502				H. V. Filter
C81	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	RF Bypass
C82	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005	29C1	RF Bypass

* Not used in all models.
† Items C54A, C54B, C54C, R60A and R60B are combined into one unit in some models.
† Items C59A, C59B, C59C R75A, R75B and R75C are combined into one unit in some models.
‡ Not used in chassis 321 and 331.
★ Chassis 321 and 331 uses .1MFD in this application. Mfgrs. part # C-146434-3.
★ Chassis 321 and 331 uses .05MFD. in this application. Mfgrs. part # C-146434-10.
¶ Chassis 321 and 331 uses .2MFD. in this application. Mfgrs. part # B-149488-2.
Note 1. Some models use .002MMF in this application. Mfgrs. part # 3900I-74.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	C-149220		RTG-245	SBB-655-5	Volume Control-Tapped @ 250KΩ-Panel
B	2000Ω	½			ATG-345	AN-75	Contrast Control And SW - Rear
R2A	1.5Meg	½	B-148952	Q11-138	RTG-245	AN-75	Vert. Hold Control
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach to R2A Per Instructions
R3A	50KΩ	Q1-123	Q11-123	AG-44-8	AN-31	Horizontal Hold Control	
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach To R3A Per Instructions
R4A	4KΩ	½	B-148966	Q11-123	AG-43-8	AN-31	Brightness Control
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach to R4A Per Instructions
R5	1500Ω	4	B-149893		RTV-205		Focus Control - Wire Wound - See Note 1.
R6A	2.5Meg	½	B-148964	Q11-239	AG-44-5	AN-83	Height Control
B	Shaft		Not req.	RQ	FKS-1/4	AK-1	Attach to R6A Per Instructions
R7A	5000Ω	½	B-148965	Q11-114	AG-19-8	AN-10	Vert. Linearity Control
B	Shaft		Not req.	RQ	FKS-1/4	AK-1	Attach to R7A Per Instructions
R8	1000Ω	1	W-148681	Q11-108			AGC Control - Wire Wound

Note 1. Chassis 321 uses control with part number B-148963 in this application.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE STATED
R9	33Ω	½	39374-12	BTS-82	RF Amp. Cathode
R10	15KΩ	½	39374-39		RF Amp. Screen
R11	560Ω	½	39374-24		RF Amp. Decoup
R12	68Ω	½	39374-11		RF Amp. Decoup
R13	1Meg	½	39374-61		Converter Grid
R14	15KΩ	½	39374-39		Osc. Grid
R15	100Ω 20%	½	39373-14	BTS-100	Tuner Decoup
R16	100Ω 20%	½	39373-14	BTS-100	Decoup
R17	1000Ω	½	39373-33	BTS-1000	AGC Network
R18	100Ω 20%	½	39373-14	BTS-100	Voltage Divider
R19	10KΩ 20%	½	39373-54	BTS-10K	AGC Network
R20	82Ω 5%	½	39375-77		1st Video IF Amp. Grid
R21	68Ω	½	39374-11		1st Video IF Amp. Cathode
R22	100Ω 20%	½	39373-14	BTS-100	Decoup
R23	6800Ω 5%	½	39375-69		2nd Video IF Amp. Grid
R24	68Ω	½	39374-11		2nd Video IF Amp. Cathode
R25	100Ω 20%	½	39373-14	BTS-100	Decoup
R26	8200Ω 5%	½	39375-71		3rd Video IF Amp. Grid
R27	100Ω	½	39376-13	BTS-100	3rd Video IF Amp. Cathode
R28	100Ω 20%	½	39373-14	BTS-100	4th Video IF Amp. Decoup
R29	6800Ω 5%	½	39375-69		4th Video Transformer Shunt
R30	100Ω	½	39376-14	BTS-100	4th Video IF Amp. Cathode
R31	8200Ω 5%	½	39375-71		5th Video IF Transformer Shunt
R32	100Ω 20%	½	39373-14	BTS-100	Video Det. Diode Load
R33	4700Ω 5%	½	39375-65	BTS-4700-5%	Video Det. Diode Load
R34	100KΩ	½	39374-49	BTS-100K	AGC Network
R35	8200Ω 5%	½	39375-71	BTS-8200-5%	AGC Network
R36	820Ω	½	39374-71	BTS-8200	AGC Network
R37	100KΩ	½	39374-49	BTS-100K	AGC Network
R38	330KΩ 5%	½	39375-109	BTS-330K-5%	AGC Network
R39	560KΩ 5%	½	39375-115	BTS-560K-5%	AGC Network
R40	47Ω	1	39374-9	BW-1-47	Video Amp. Decoup
R41	82KΩ	1	39374-136	BTA-82K	Video Amp. Screen
R42	20KΩ 5%	2			Video Amp. Plate - See Note 2 and 6
R43	30KΩ 5%	3			Video Amp. Plate - See Note 3 and 6
R44	12KΩ 5%	1		BTA-12K-5%	Voltage Divider - See Note 7
R45	120KΩ		39374-50	BTS-120K	Voltage Divider
R46	330Ω	3	39374-31	BTS-330Ω	Isolation
R47	6800Ω	1	39374-123	BTA-6800	Brightness Control Shunt
R48	39KΩ	2	39374-222	BTS-39K	Voltage Divider
R49	47KΩ	2	39374-231	BTS-47K	Voltage Divider

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R50	6800Ω	1	39374-123	BTA-6800	Voltage Divider
R51	100KΩ	1	39374-49	BTB-100K	Picture Tube Grid
R52	2200Ω	1	39374-29	BTB-2200	Picture Tube Cathode
R53	220Ω	1	39374-17	BTB-220	Sound IF Amp. Cathode
R54	18KΩ	1	39374-40		Sound IF Amp. Decoup
R55	2Ω	1	39374-5	BW-1-2	Balancing - See Note 8 and 11
R56	27KΩ	1	39374-42	BTB-27K	De-emphasis
R57	18KΩ 5%	1	39375-79	BTB-18K-5%	Ratio Det. Diode Load
R58	68KΩ 20%	1	39373-47	BTB-68K	Tone Compensation
R59	3.9Meg	1	39374-75	BTA-3.9Meg	A.F Amp. Grid
R60A	220KΩ	1	W-149881 †		A.F Amp. Plate
B	470KΩ	1			Output Grid
R61	270Ω	2	39374-194	BTB-270	Output Cathode
R62	390Ω	2	39374-196	BTB-390	Voltage Divider
R63	180KΩ	1	39374-53	BTB-180K	Sync. Sep. Cathode
R64	820KΩ	1	39374-60	BTB-820K	Sync. Sep. Plate
R65	47KΩ	1	39374-45	BTB-47K	Voltage Divider
R66	1Meg	1	39374-61	BTB-1Meg	Sync. Clipper Grid
R67	18KΩ	1	39374-40	BTB-18K	Sync. Clipper Plate
R68	3.3Meg 20%	1	39373-100	BTB-3.3Meg	Sync. Amp. Grid
R69	680KΩ	1	39374-35	BTB-680K	Sync. Amp. Cathode
R70	27KΩ	1	39374-42	BTB-27K	Sync. Amp. Plate
R71	270KΩ	1	39374-43	BTA-270K	Voltage Divider
R72A	22KΩ	1	W-149878 †		Integrator
B	8200Ω	1			Integrator
C	8200Ω	1			Integrator
R73	1.2Meg	1	39374-63	BTB-1.2Meg	Vert. Osc. Grid
R74	220KΩ	1	39374-53	BTB-220K	Vert. Osc. Plate
R75	10KΩ	1	39374-37	BTB-10K	Vert. Osc. Transformer Shunt
R76	22KΩ	1	39374-41	BTB-22K	Decoup
R77	8200Ω	1	39374-26	BTB-8200	Vert. Peaking
R78	1.2Meg	1	39374-63	BTB-1.2Meg	Vert. Output Grid - See Note 3
R79	1000Ω	1	39374-113	BTA-1000	Vert. Output Decoup
R80	2200Ω	2	39374-205	BTB-2200	Voltage Divider
R81	2.7Meg	1	39374-71	BTB-2.7Meg	Horiz. AFC Grid
R82	820KΩ	1	39374-60	BTB-820K	Horiz. AFC Plate
R83	8200Ω	1	39374-26	BTB-8200	Horiz. AFC Cathode
R84	150KΩ	1	39374-51	BTB-150K	Horiz. AFC Cathode
R85	150KΩ	1	39374-51	BTB-150K	Horiz. AFC Plate
R86	100KΩ	1	39374-137	BTA-100K	Horiz. AFC Plate
R87	68KΩ	1	39374-47	BTB-68K	Voltage Divider
R88	100KΩ 5%	1	39375-97	BTB-100K-5%	Horiz. Osc. Grid
R89	68KΩ	1	39374-135	BTA-68K	Horiz. Osc. Plate
R90	10KΩ	1	39374-37	BTB-10K	Horiz. Osc. Transformer Shunt
R91	22KΩ	1	39374-41	BTB-22K	Horiz. Osc. Transformer Shunt
R92	150KΩ	1	39374-51	BTB-150K	Horiz. Feedback Network
R93	27KΩ	1		BTA-27K	Decoup - See Note 4
R94	1000Ω 20%	1	39373-33	BTB-1000	Decoup
R95	100Ω 20%	1	39373-14		Parasitic Supp.
R96	100Ω 20%	1	39373-14		Parasitic Supp.
R97	100Ω 20%	1	39373-14		Parasitic Supp.
R98	100Ω 20%	1	39373-14		Parasitic Supp.
R99	1Meg 20%	1	39373-92	BTB-1Meg	Horiz. Output Grid
R100	47Ω	1	39374-97		Horiz. Output Cathode - See Note 10
R101	27KΩ	2	39374-218	BTB-27K	Horiz. Output Screen - See Note 5
R102	27KΩ	2	39374-218	BTA-27K	Horiz. Output Screen - See Note 5
R103	6800Ω	2	39374-211	BTB-6800	Horiz. Output Screen
R104	6800Ω	2	39374-211	BTB-6800	Horiz. Output Screen
R105	15KΩ	2	*	BTB-15K	Current Limiting
R106	8.2Ω	1	39303-19		H. V. Rectifier Filament
R107	1Meg	1	39373-202		H. V. Filter
R108	2200Ω	2	39374-205	BTB-2200	Focus Coil Shunt - See Note 11
R109	330Ω	7	W-148554-2		Focus Coil Shunt
R110	27Ω	2		BW-2-27	Bias Network - See Note 9

* Supplied with horizontal output transformer T3.
† Items R60A, R60B, C54A, C54B and C54C are combined into one unit in some sets.
† Items R72A, R72B, R72C, C59A, C59B and C59C are combined into one unit in some sets.
Note 2. Chassis 321 uses 10KΩ resistor in place of R42 and R43.
Note 3 Chassis 321 uses 2.2Meg resistor in this application.
Note 4. Chassis 321 uses 18KΩ resistor in this application.
Note 5. Chassis 321 uses 56KΩ resistor in this application.
Note 6. Some models use 22KΩ resistor in this application.
Note 7. Some models use 10KΩ resistor in this application.
Note 8. Some models use 68Ω resistor in this application.
Note 9. Some models use 22Ω resistor in this application.
Note 10. Used in early production models only.
Note 11. Not used in all models.

TRANSFORMER (POWER)

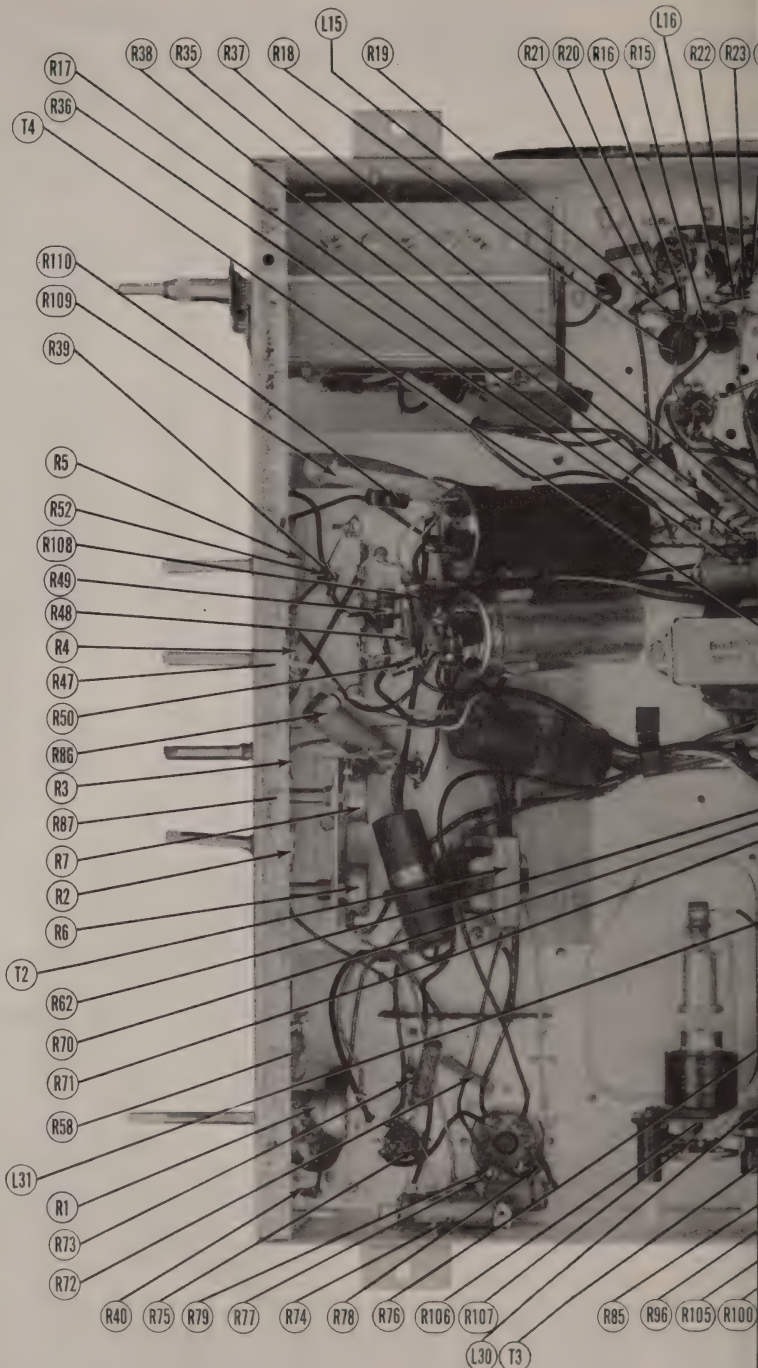
ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC	640VCT	5V	6.3V	C148950			
	@ 2.3A	.230ADC	@ 6A	@ 1.95A				
				SEC. 4				
				6.3V				
				@ 8A				

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: SEC.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	700Ω	180Ω	B146842-3	A-3000			Vert. Block
T3	27Ω	250Ω	AD149661 ①	HV0-6			Horiz. Output
		SEC. 2	AD149567 ②				
		7Ω Taps 3-4-5Ω					
		SEC. 3					
		0Ω					
T4	800Ω		B148970	A-8123	A-3036		Vert. Output
	Tap 14Ω						
T5A	14Ω		148887-6	DY-7	MD-70		Horiz. Deflection Coil
B	60Ω						Vert. Deflection Coil
T6	490Ω		AD-149539		MF-3		Focus Coil

① Used in models 11-446MU, 11476BU
② Used in models 11-443MU, 11-446MU, 11-447MU, 11-472MU, 11-475BU, 11-477BU

PARTS LIST CONTINUED ON PAGE 15



CHASSIS BOTTOM VIEW-RESISTOR

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T7	5KΩ	3.6Ω	360Ω	.7Ω	B149476	A-3877 ③	A-2930 ③	R0-9 ③	③Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	CROSLEY PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	3.6Ω	138762-5	10J12	10A4A	
	CONE DIA.	V. C. DIA.				
SP2	9 1/2"	1"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 ∿)	CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.225ADC	49Ω	1 Henry	B149475	C-2326 ①	C-3196	TR4200 ①②	②Drill new mtg. hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	CROSLEY PART No.	MEISSNER PART No.	IRC PART No.	
L2	Ant. Coil	.6Ω		B-148936-2		CLA	.82 Microhenry
L3	Grid Choke	6.1Ω		B-148936-3		CL-1	8.2 Microhenries
L4	Ant. Coil	0Ω					Part of Tuner Part # W-149222
L5	Ant. Coil End Inductor	0Ω		AW-149071			
L6	RF End Inductor	0Ω		AW-149070			Part of Tuner Part # W-149222
L7	RF Coil	0Ω					
L8	Osc. Coil Shunt	0Ω		AW-149062			Part of Tuner Part #W-149222
L9	Osc. Coil	0Ω					
L10	Osc. Coil End Inductor	0Ω		AW-149069			
L11	Osc. Coupling Coil	0Ω		AW-149086			
L12	Converter Plate Coil	0Ω		AW-149072			
L13	1st Video IF	.5Ω		AW-149088			
L14	RF Choke	.1Ω		AW-149063			
L15	1st Video IF Coupling	.4Ω		AW-146763			
L16	2nd Video IF	.3Ω		AW-146582			
L17	3rd Video IF	.3Ω		AW-146583			
L18	Fil. Choke	0Ω		AW-143934			
L19	4th Video IF	.6Ω	.7Ω	AW-147974			
L20	5th Video IF	.8Ω	.8Ω	AW-148983			
L21	Peaking	1Ω		AW-149357			Orange Dot(Wound on 1ΩΩ Resistor)
L22	Peaking	19Ω		AW-146889			Blue Dot
L23	Peaking			AW-149242			White Dot(Not Used In All Models)
L24	Peaking	23Ω					Blue Dot(Wound on Resistor)
L25	Peaking	13Ω					Wound On Resistor
L26	Sound IF	2.6Ω	2.4Ω	AC-146782			
L27	Ratio Det. Trans.	4.2Ω	.2Ω	C-146874			
L28	Delay Coil	120Ω		AW-148440			
L29	Horiz. Osc. Trans	140Ω	40Ω	AC-146698			
L30	Horiz. Lin.	8Ω		AW-149452			
L31	Width Coil	21Ω	10Ω	AW-149492			

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			CROSLEY PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1A	3AG	.250A	W145780 ①		318.250		① Used in Model 11-446MU, 11-476BU
B		.175A	W150065 ②				② Used in Models 11-445MU, 11-447MU, 11-475BU, 11-477BU, 11-459MU, 11-459MU 11-465WU

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M2	RF Tuner	AW-149159	Complete
M3	Switch	W-146280	TV-Phono
M4	Ion Trap	B-148484	
B1, B6	Trimmer	B-132386-17	2 Sections (Horiz. Drive 10-160MMF, Horiz. Lock 10-160MMF)
	Safety Glass	R-149067-1	Model 11-446MU
	Safety Glass	R-149067-2	Model 11-476BU
	Safety Glass	R-149981-1	Models 11-442MU, 11-445MU, 11-447MU
	Safety Glass	R-149981-2	Models 11-472BU, 11-475BU, 11-477BU
	Escutcheon	C-149549-1	Model 11-446MU
	Escutcheon	C-149549-2	Model 11-476BU
	Escutcheon	C-149128-1	Model 11-442MU, 11-445MU, 11-447MU
	Escutcheon	C-149128-2	Models 11-472BU, 11-475BU, 11-477BU
	Pointer	W-149046	Tuning
	Knob	AW-148867	Tuning (Models 11-446MU, 11-442MU, 11-445MU, 11-447MU)
	Knob	AW-149853	Tuning (Models 11-476BU, 11-472BU, 11-475BU, 11-477BU)
	Knob	AW-148865	Contrast (Models 11-446MU, 11-442MU, 11-445MU, 11-447MU)
	Knob	AW-149852	Contrast (Models 11-476BU, 11-472BU, 11-475MU, 11-477BU)
	Knob	AW-148986	Volume (Models 11-446MU, 11-442MU, 11-445MU, 11-447MU)
	Knob	AW-149854	Volume (Models 11-476BU, 11-472BU, 11-475BU, 11-477BU)

PHOTOFACT* Folder

EMERSON MODELS
669B, 675B, 688B, 689B, 690B
(CH. 120129-B)

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MODEL 675B

EMERSON MODELS
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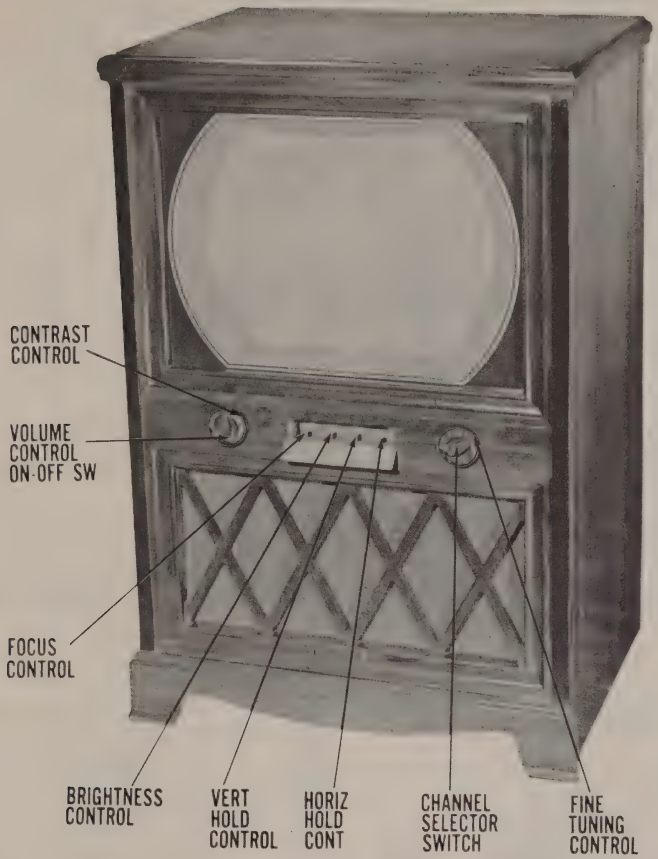
EMERSON MODELS 669B, 675B, 688B, 689B, 690B (Ch. 120129-B)

EMERSON MODELS 669B, 675B, 688B, 689B, 690B (Ch. 120129-B)



EMERSON MODEL 675B

TRADE NAME	Emerson Models 669B, 675B, 688B, 689B, 690B (Ch. 120129-B)
MANUFACTURER	Emerson Radio And Phono Corp., 111 Eighth Ave., New York, N.Y.
TYPE SET	Television Receiver
TUBES	Twenty Three
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	2.4 Amp. @ 117 Volts AC
TUNING RANGE	BROADCAST

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HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

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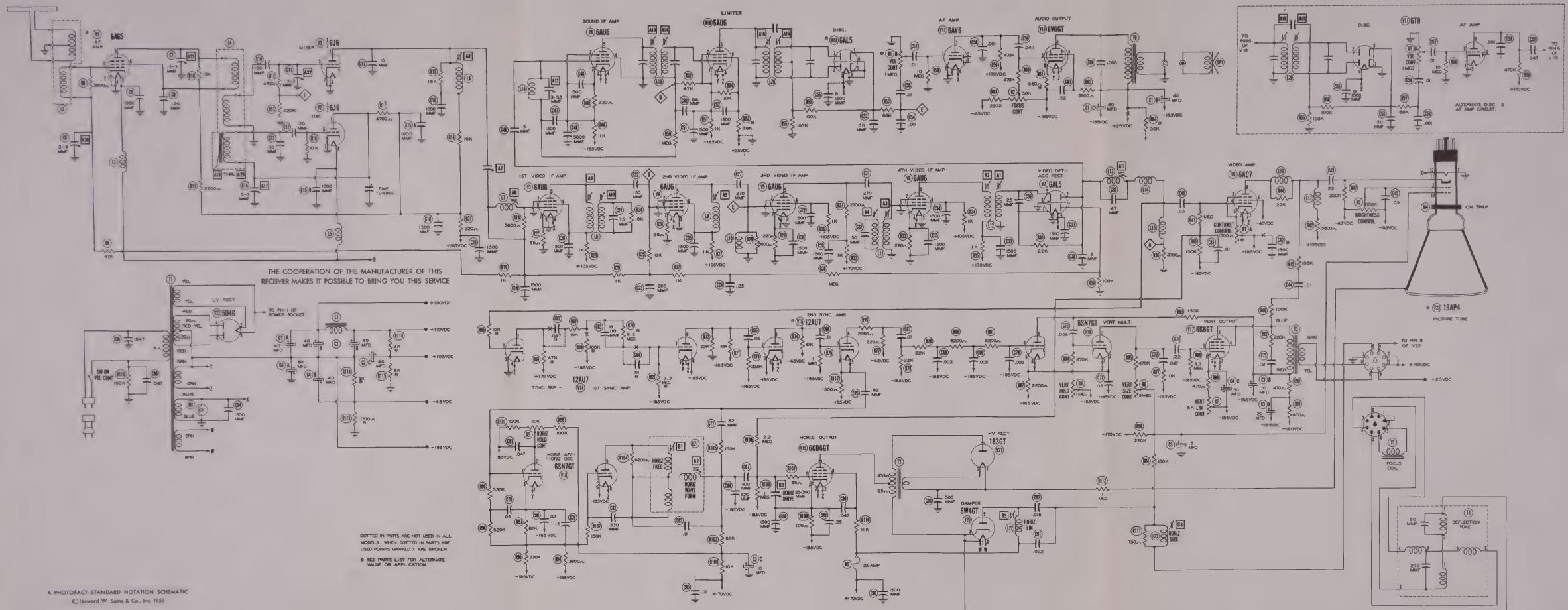
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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EMERSON MODELS 669B, 675B, 688B, 689B, 690B (Ch. 120129-B)

EMERSON MODELS 669B, 675B, 688B, 689B, 690B (Ch. 120129-B)

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	520Ω Tap 85Ω		738047 or 738048				Horiz. Output
T3	440Ω	.4Ω	738044		H-3039		Vert. Output
T4A	43Ω		708043				Horiz. Deflection Coil
B	33Ω						Vert. Deflection Coil
T5	2.3KΩ		708146		MF-2		Focus Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T6	5.8KΩ	4.4Ω	320Ω	.65Ω	734051	A3849	A-3019	RO-9 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA EMERSON PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1	PM	4Ω	180050	12J12	12A31A	
	CONE DIA.	V. C. DIA.				
SP2	11 7/8 "	1 "				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D.C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ∽)	REPLACEMENT DATA EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.170ADC	100Ω	3.7 Henries	737011	C-1410 ①	C-2991 ①	TR-3300①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA EMERSON PART No.	MEISSNER PART No.	NOTES
L2	Ant. Coil	0Ω				Part of Tuner Part # 470651
L3	Fil. Choke	0Ω				Part of Tuner Part # 470651
L4	RF Mixer Grid and Osc. Coils	0Ω				Part of Tuner Part # 470651
L5	Fil. Choke	0Ω				Part of Tuner Part # 470651
L6	1st Video IF Primary	.4Ω				Part of Tuner Part # 470651
L7	1st Video IF Secondary	.4Ω				Part of Tuner Part # 470651
L8	2nd Video IF	.3Ω		720105		Includes Trap
L9	3rd Video IF	.3Ω		720088		
L10	Grid Choke	.3Ω		705014		20 Microhenries
L11	4th Video IF	.2Ω		720091		Includes Trap
L12	5th Video IF	.7Ω	.7Ω	720089		
L13	4.5MC Trap	2.8Ω		708032		
L14	RF Choke	3Ω		705014		20 Microhenries
L15	Peaking	17Ω		708116		1000 Microhenries
L16	Peaking	9.5Ω		708099	19-1923	330 Microhenries
L17	Peaking	22Ω		708115		660 Microhenries (Yellow Dot)
L18	1st Sound IF	4Ω		708093		35 Microhenries (Red Dot)
L19	2nd Sound IF	1.7Ω	1.7Ω	720081		
L20	Disc. Trans.	1.6Ω	1.6Ω	708018		
L21	Horiz. Osc. Trans.	120Ω	36Ω	738035		
L22	Horiz. Lin.	38Ω		708003		
L23	Horiz. Size	4.6Ω		708058		

DIAL LIGHTS

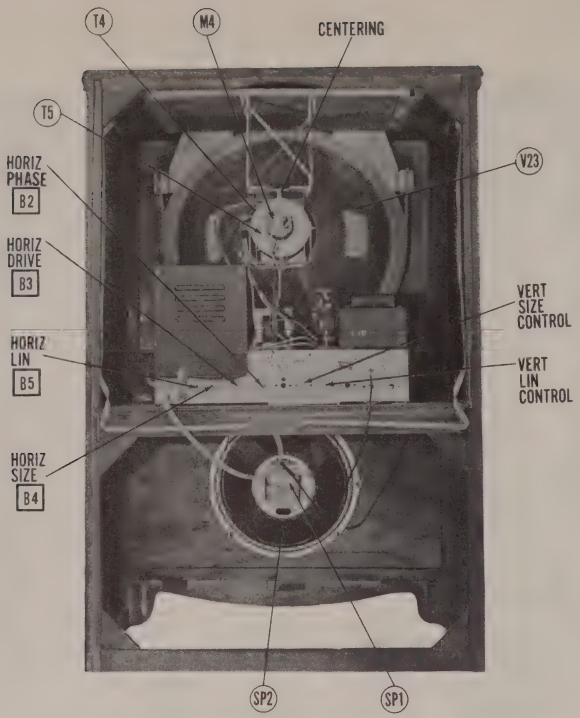
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA EMERSON PART No.		NOTES
M1	Bayonet	6-8	.15A	Brown	807000		Type # 47 (Models 669B, 689B, 690B)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA EMERSON PART No. FUSE	EMERSON PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M2	3AG	1/4A	808170		318.250		

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M3	RF Tuner	470651	
M4	Ion Trap	708065	
A12	Trimmer	900064	1st Sound IF (3-35MMF)
B3	Trimmer	900054	Horiz. Drive (25-300MMF)
	Safety Glass	520143	Model 675B
	Safety Glass	520137	Model 669B
	Safety Glass	520147	Models 668B, 689B, 690B
	Knob	460177	Channel Selector
	Knob	460178	Fine Tuning
	Knob	460175	Contrast
	Knob	460176	Volume



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Connect a short across terminals C and D of L21.
Turn the set on and tune in a TV station, preferably a test pattern.
Turn the contrast control to maximum clockwise.
Starting with the horizontal frequency slug (B1) fully out, adjust clockwise until the picture synchronizes horizontally.
Remove the short from L21 and connect the vertical input lead of an oscilloscope through a 22KΩ resistor to terminal C, connect the low side to B-. CAUTION: the oscilloscope case is connected to approximately - 155 volts with respect to chassis, avoid grounding or touching the oscilloscope case.
Adjust the phasing slug (B2) until the broad and narrow peaks of the waveform are of equal height as shown in figure 12. If necessary, during adjustment of B2, adjust B1 to keep the picture synchronized.
Momentarily interrupt the signal by switching to another channel and back again. The picture should be out of sync. and show 4 or 5 sloping bars. If necessary adjust B1 and repeat the check until 4 or 5 bars are present. The picture should sync after approximately 1/4 turn of the hold control and remain in sync over the entire range of the control.
Adjust the horizontal drive trimmer (B3) clockwise as far as possible without crowding the right side of the picture.
Adjust the horizontal size slug (B4) until the picture is of proper width.
Adjust the horizontal linearity slug (B5) until the picture is symmetrical from left to right. Readjustment of B3 may be required to obtain optimum results.

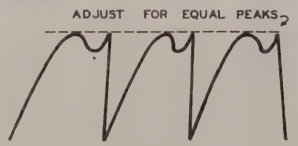
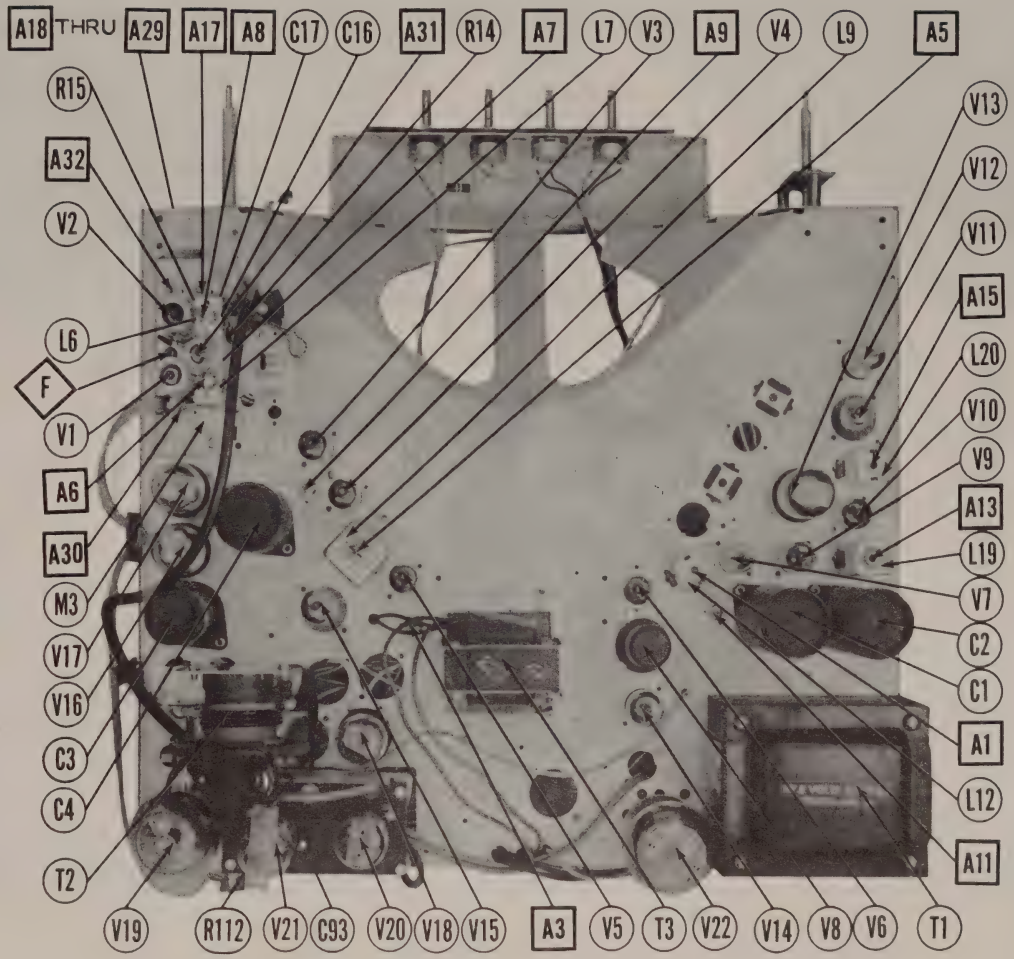


FIG. 12

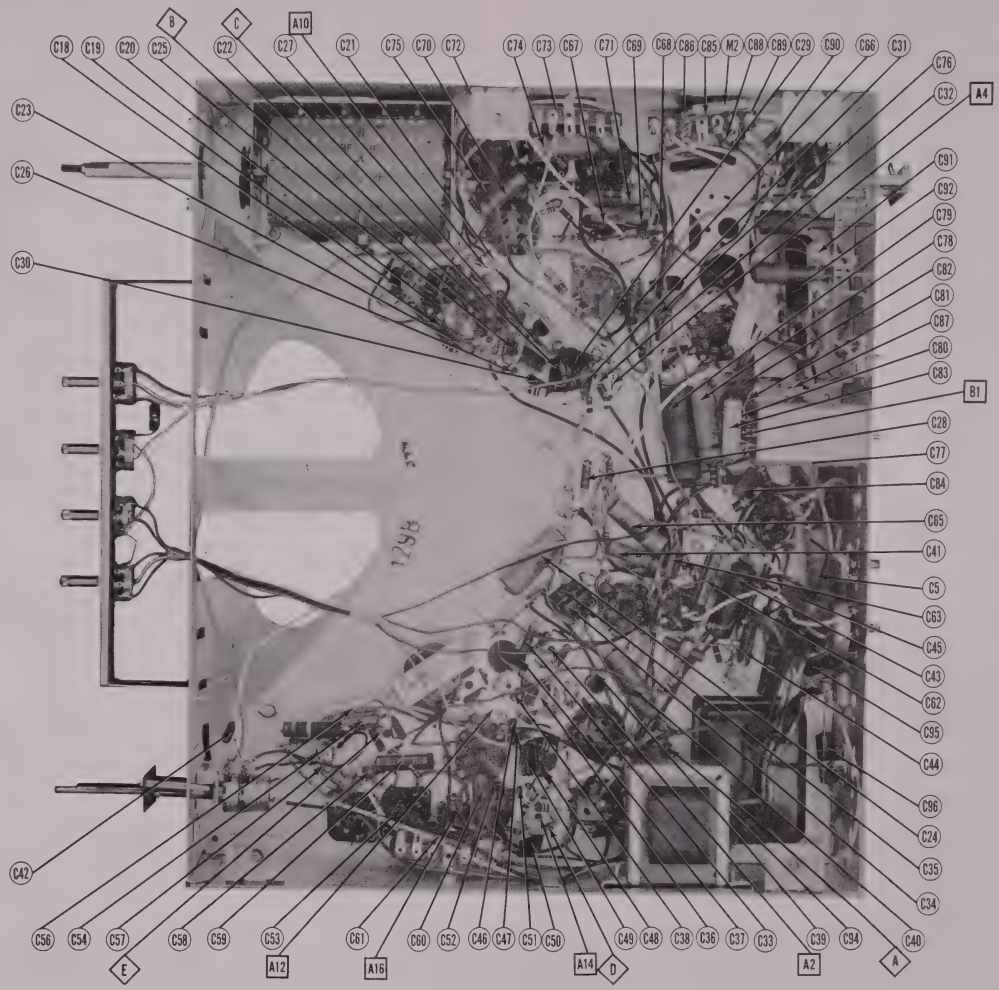
DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL
1. Remove four push-on type control knobs.
2. Remove ten wood screws securing rear cover to cabinet. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect speaker.
5. Remove four 7/16" hex head bolts securing chassis to cabinet. Remove chassis.
6. Remove four 5/16" hex nuts holding speaker to cabinet. Remove speaker.

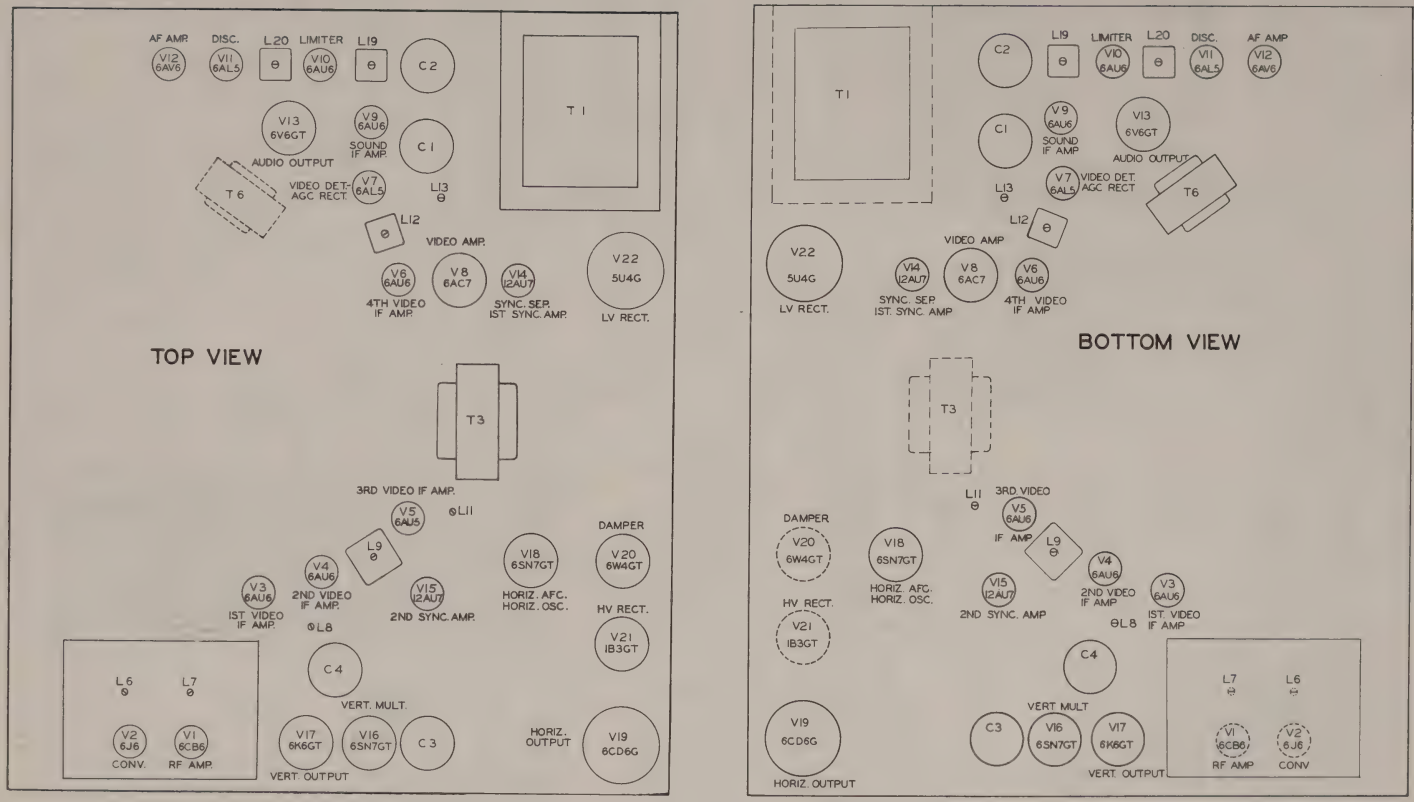
PICTURE TUBE REMOVAL
1. Remove rear cover.
2. Disconnect ground strap.
3. Disconnect yoke cable.
4. Disconnect HV lead.
5. Remove four phillips head screws securing sliding mounting board to cabinet.
6. Remove picture tube.



CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TUBE PLACEMENT CHART

EMERSON MODELS 669B, 675B, 688B, 689B, 690B (Ch. 120129-B)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) and replace it witha 6J6 which has pin 1 removed, this will disable the local oscillator and prevent erroneous indications. Connect the negative lead of a 3 volt battery to the junction of R20 and R37, connect the positive lead to chassis.

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.001MFD	High side to pin 1 (grid) of 6AU6 (V6). Low side to chassis.	23.5MC (10MC SWP)	21.9MC 25.75MC	Any	Vert. amp. thru 10KΩ to Point Ⓐ. Low side to chassis.	A1, A2	Adjust for response curve similar to figure 1.
2.	"	High side to pin 1 (grid) of 6AU6 (V5). Low side to chassis.	"	24.1MC 27.25MC	"	"	A3, A4	Adjust A3 to place 24.1MC marker as per figure 2. Adjust A4 for MINIMUM 27.25MC marker indication.
3.	"	High side to pin 1 (grid) of 6AU6 (V4). Low side to chassis.	"	25MC	"	"	A5	Adjust for response similar to figure 3.
4.	"	High side, (thru hole in side), to third lug from front of tuner. Low side to chassis.	"	21.25MC 27.75MC	"	Vert. amp. thru detector probe (fig. 4) to Point Ⓑ. Low side to chassis.	A6, A7, A8	Adjust for response curve similar to fig. 5.
5.	"	"	"	21.25MC 22.2MC	"	Vert. amp. thru detector probe to Point Ⓒ. Low side to chassis.	A9, A10	Adjust A9 to place 22.2MC marker as shown in figure 6. Adjust A10 for MINIMUM marker indication at 21.25MC point on curve.
6.	"	"	"	21.25MC 21.9MC 25.75MC	"	Vert. amp. thru 10KΩ to Point Ⓐ. Low side to chassis.		Check for response curve similar to figure 7. If necessary retouch A5 to place 25.75MC marker, A9 to place 21.9MC marker and A10 to equalize the peaks within 10%

4.5MC TRAP ADJUSTMENT

Turn the contrast control to maximum.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.001MFD	High side to pin 5 (cathode) of 6AL5 (V7). Low side to chassis.	Not used	4.5MC (400∿ Mod.)	Any	Vert. amp. thru detector probe (fig. 4) to pin 8 plate of 6AC7 (V8). Low side to chassis.	A 11	Adjust for MINIMUM 400∿ indication on scope.

SOUND IF ALIGNMENT

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.001MFD	High side to pin 5 (cathode) of 6AL5 (V7). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point Ⓓ. Low side to chassis.	A12, A13, A14	Adjust for maximum amplitude and symmetry as per figure 8.
9.	"	"	"	"	"	Vert. amp. to Point Ⓔ. Low side to chassis.	A15, A16	Adjust A15 so 4.5MC occurs at center of cross-over lines as per figure 9. Adjust A16 for maximum amplitude and straightness of cross-over lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.

Complete oscillator alignment may not be necessary. If the oscillator seem to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A17. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for an individual channel. If adjustment of A17 will not bring all channels within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp. to Point Ⓐ. Low side to chassis.	A18	Adjust to place sound marker in "notch" as shown in figure 10. The video marker should be at 25%
			207MC (10MC SWP)	205.25MC 209.75MC	12		A19	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A20	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A21	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A22	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A23	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A24	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A25	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A26	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A27	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A28	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A29	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its charcteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point (F). Low side to chassis.	A30, A31, A32	Adjust for response curve similar to figure 11. with markers above 90%.
12.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check for response curve similar to figure 11. If markers fall below 70% on any channel, make slight adjustments of A30, A31 and A32 with channels selector set for that channel. Recheck all channels to see that they have not been seriously effected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

FIG.1

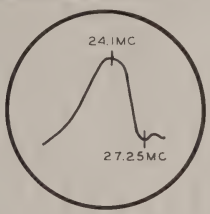


FIG.2

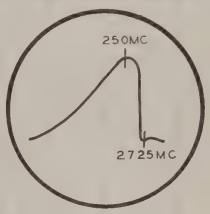


FIG.3

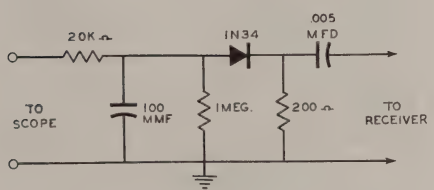


FIG.4

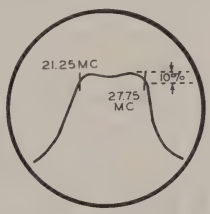


FIG.5

FIG.6

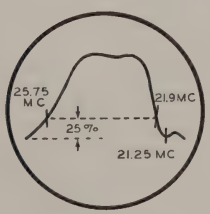


FIG.7

FIG. 8

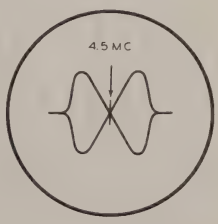


FIG.9

FIG.10

FIG.11

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-.3VDC	0V	6.3VAC	0V	85VDC	85VDC	0V		
V 2	6J6	75VDC	70VDC	6.3VAC	0V	-5.4VDC	§-5.6VDC	0V		
V 3	6AU6	-.2VDC	0V	0V	6.3VAC	95VDC	95VDC	.3VDC		
V 4	6AU6	-.2VDC	0V	0V	6.3VAC	95VDC	95VDC	.4VDC		
V 5	6AU6	0V	0V	0V	6.3VAC	145VDC	100VDC	1.2VDC		
V 6	6AU6	0V	0V	0V	6.3VAC	160VDC	100VDC	1.2VDC		
V 7	6AL5	-.2VDC	-.6VDC	0V	6.3VAC	0V	0V	-2.2VDC		
V 8	6AC7	0V	#6.3VAC	#2VDC	#-.3VDC	#2VDC	#140VDC	#0V	#340VDC	
V 9	6AU6	#1VDC	#6.9VDC	#0V	#6.3VAC	#185VDC	#185VDC	#8.6VDC		
V 10	6AU6	#3.6VDC	#6.4VDC	#0V	#6.3VAC	#185VDC	#50VDC	#6.4VDC		
V 11	6AL5	.2VDC	-2.2VDC	6.3VAC	0V	0V	0V	-2.2VDC		
V 12	6AV6	-.6VDC	0V	0V	6.3VAC	0V	0V	60VDC		
V 13	6V6GT	0V	#6.3VAC	#200VDC	#135VDC	#9.3VDC	#27VDC	#0V	#30VDC	
V 14	12AU7	40VDC	-1VDC	0V	#6.3VAC	#6.3VAC	#50VDC	#-6.9VDC	#0V	#0V
V 15	12AU7	#100VDC	#-4.4VDC	#0V	#6.3VAC	#6.3VAC	#130VDC	#-15VDC	#5VDC	#0V
V 16	6SN7GT	#-20VDC #-30VDC	#200VDC #100VDC	#4.8VDC	#0V	#100VDC	#4.8VDC	#6.3VAC	0V	
V 17	6K6GT	0V	#0V	#370VDC	#370VDC	#-.2VDC	#365VDC	#6.3VAC	#50VDC #15VDC	
V 18	6SN7GT	#-1.5VDC	#200VDC #150VDC	#25VDC #9VDC	#-60VDC	#185VDC	#0V	#0V	#6.3VAC	
V 19	6CD6G	0V	#6.3VAC	#10VDC	#-17VDC	#-17VDC	#-.8VDC	#0V	#125VDC	TOP CAP *
V 20	6W4GT	0V	0V	420VDC	0V	170VDC	0V	420VDC	420VDC	
V 21	1B3GT	* DO NOT MEASURE								
V 22	5U4G	0V	190VDC	0V	175VAC	0V	175VAC	0V	190VDC	
V 23	19AP4	0V	#145VDC #0V	PIN 10 #500VDC	PIN 11 #140VDC	PIN 12 6.3VAC				

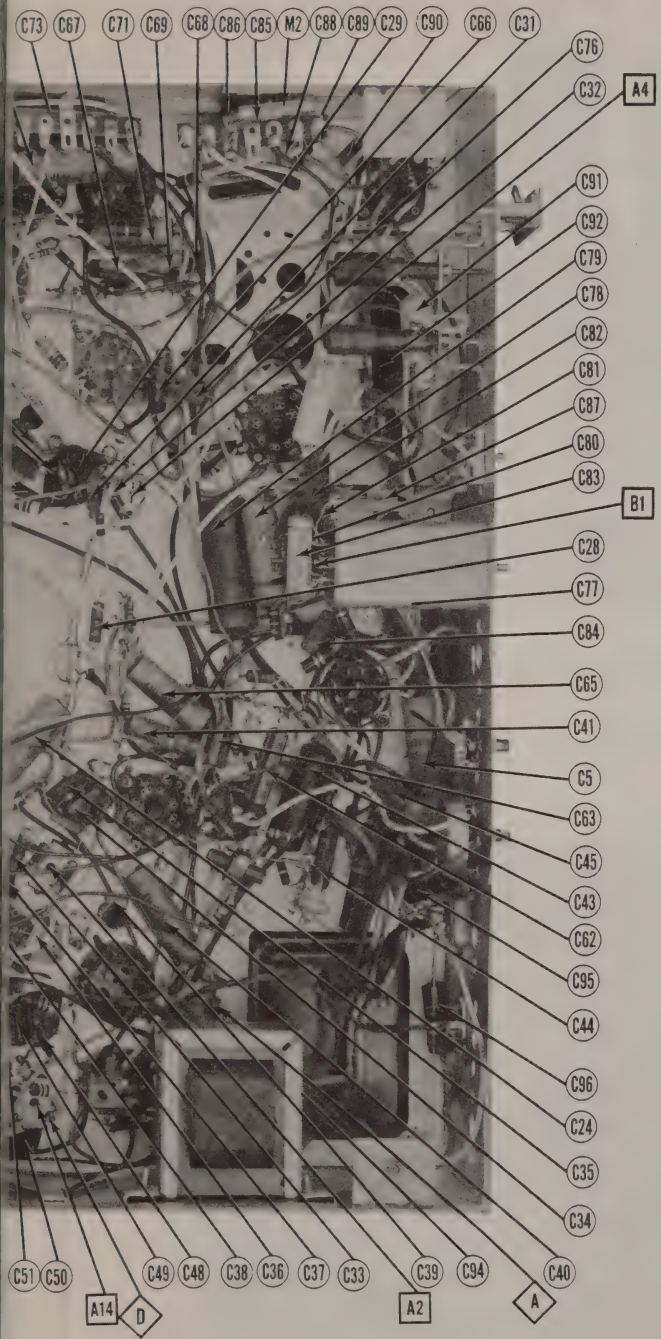
FOCUS CONTROL COUNTER CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
# MEASURED FROM -185VDC POINT
* DO NOT MEASURE

RESISTANCE READINGS

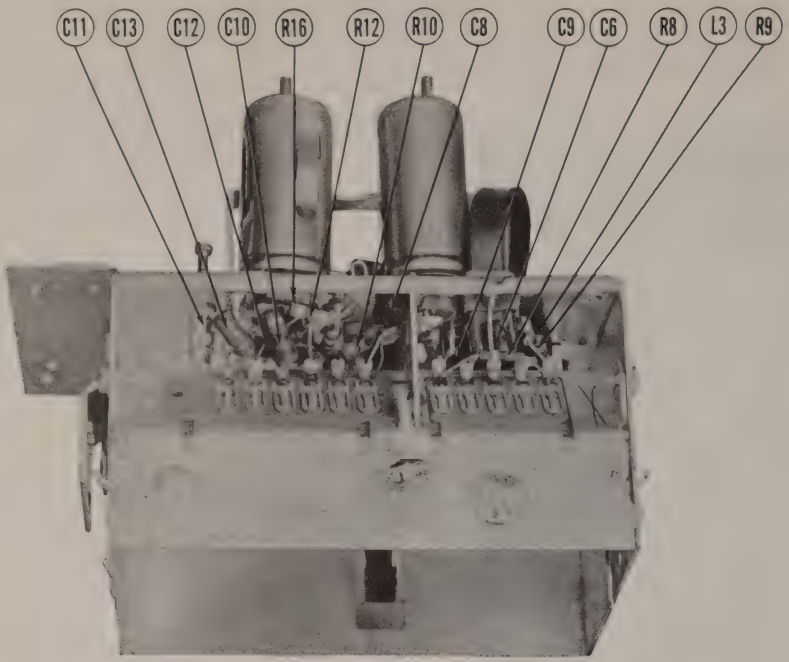
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	1.1Meg	0Ω	.1Ω	0Ω	†4.5KΩ	†4.5KΩ	0Ω		
V 2	6J6	†7KΩ	†12KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6AU6	1.1Meg	0Ω	0Ω	.1Ω	†3.1KΩ	†3.1KΩ	68Ω		
V 4	6AU6	1.1Meg	0Ω	0Ω	.1Ω	†3.1KΩ	†3.1KΩ	68Ω		
V 5	6AU6	.3Ω	0Ω	0Ω	.1Ω	†3.8KΩ	†3.1KΩ	220Ω		
V 6	6AU6	.2Ω	0Ω	0Ω	.1Ω	†1.1KΩ	†3.1KΩ	220Ω		
V 7	6AL5	27KΩ	4.7KΩ	0Ω	.1Ω	.7Ω	0Ω	100KΩ		
V 8	6AC7	0Ω	#.1Ω	#1.5KΩ	#1.1Meg	#1.5KΩ	1.7KΩ	#0Ω	†5.7KΩ	
V 9	6AU6	#1Meg	#1KΩ	#0Ω	#.1Ω	1.7Ω	0Ω	#1.2KΩ		
V 10	6AU6	#48KΩ	#1KΩ	#0Ω	#.1Ω	1.6Ω	†25KΩ	#1KΩ		
V 11	6AL5	200KΩ	100KΩ	.1Ω	0Ω	0Ω	0Ω	100KΩ		
V 12	6AV6	10Meg	0Ω	0Ω	.1Ω	Inf.	Inf.	†470KΩ		
V 13	6V6GT	Inf.	#.1Ω	†2.6KΩ	†8KΩ	#500KΩ	#40KΩ	#0Ω	#560Ω	
V 14	12AU7	†47KΩ	15KΩ	0Ω	#.1Ω	#.1Ω	10KΩ	#2.3Meg	#0Ω	#0Ω
V 15	12AU7	12KΩ	#330KΩ	#0Ω	#.1Ω	#.1Ω	4.1KΩ	#1Meg	#1.5KΩ	#0Ω
V 16	6SN7GT	#470KΩ #1.5Meg	†600KΩ †2.6Meg	#2.2KΩ	#60KΩ	†150KΩ	#2.2KΩ	#.1Ω	#0Ω	
V 17	6K6GT	Inf.	#0Ω	†1.4KΩ	†1.4KΩ	#3.3Meg	†220KΩ	#.1Ω	#5.5KΩ #470Ω	
V 18	6SN7GT	#1.5Meg	#50KΩ #60KΩ	#410KΩ	#480KΩ	†80KΩ	#0Ω	#0Ω	#.1Ω	
V 19	6CD6G	Inf.	#.1Ω	#100Ω	#750KΩ	#750KΩ	#150KΩ	#0Ω	†11KΩ	TOP CAP ▲85Ω
V 20	6W4GT	Inf.	Inf.	200KΩ	Inf.	†140Ω	Inf.	▲ 0Ω	▲ .2Ω	
V 21	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲ 520Ω
V 22	5U4G	Inf.	20KΩ	Inf.	7KΩ	Inf.	7KΩ	Inf.	20KΩ	
V 23	19AP4	0Ω	#6KΩ # 0Ω	PIN 10 ▲150KΩ	PIN 11 #220KΩ	PIN 12 .1Ω				

FOCUS CONTROL COUNTER CLOCKWISE
† MEASURED FROM PIN 8 OF V22
# MEASURED FROM -185VDC POINT
▲ MEASURED FROM PIN 3 OF V20

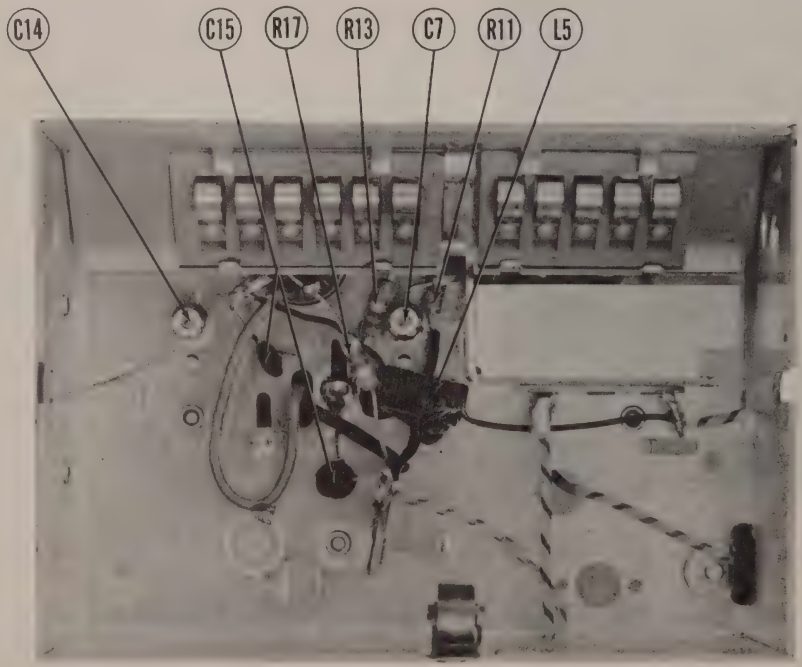
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



AND ALIGNMENT IDENTIFICATION



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	800065	6CB6	7CM	
B	RF Amplifier	800052	6BC5	7BD	
C	RF Amplifier	800535	6AG5	7BD	
V2	Converter	800536	6J6	7BF	
V3	1st Video IF Amp.	800533	6AU6	7BK	
V4	2nd Video IF Amp.	800533	6AU6	7BK	
V5	3rd Video IF Amp.	800533	6AU6	7BK	
V6	4th Video IF Amp.	800533	6AU6	7BK	
V7	Video Det. -AGC Rectifier	800541	6AL5	6BT	
V8	Video Amp.	800390	6AC7	8N	
V9	Sound IF Amp.	800533	6AU6	7BK	
V10	Limiter	800533	6AU6	7BK	
V11	A Discr.	800541	6AL5	6BT	
	B Discr. -AF Amp.	800035	6T8	9A	
V12	AF Amp.		6AV8	7BT	
V13	Audio Output	800270	6V6GT	7AC	
V14	Sync. Sep-ist Sync. Amplifier	800026	12AU7	9A	
V15A	2nd Sync. Amp.	800026	12AU7	9A	
	B 2nd Sync. Amp.	800380	6SN7GT	8BD	
V16	Vert. Mult.	800380	6SN7GT	8BD	
V17	Vert. Output	800016	6K6GT	7S	
V18	Hor. AFC-Hor. Osc.	800380	6SN7GT	8BD	
V19	Hor. Output	800049	6CD6G	5BT	
V20	Damper	800016	6W4GT	4CG	
V21	H. V. Rectifier	800450	1B3GT	3C	
V22	L. V. Rectifier	800290	5U4G	5T	
V23A	Picture Tube	800012	19AP4	12D	
	B Picture Tube		19AP4A	12D	
	C Picture Tube		19AP4B	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	925148	AFH888J		UPT44445		TVL-3787	▲ Filter
B	40	450							¤ Filter
C	40	450							‡ Filter
C2A	40	450	925148	AFH888J		UPT44445		TVL-3787	▲ Filter
B	40	450							¤ Filter
C	40	450							‡ Filter
C3A	20	450	925134	AFH333J		UP33145		TVL-3778	▲ Filter
B	10	450							▲ Decoupling
C	10	450							▲ Decoupling
C4A	60	350	925149	AFH961612F		UPT2935-61W3		TVL-3525	▲ Filter
B	60	150							¤ Filter
C	50	50							▲ Vert. Output Cathode Decoupling
C5	5	450	925185	PRS450/4		HH445		TVA-1702	Decoupling
C6	5-8				829-3				Variable Trimmer
C7	.5-3				829-3				Variable Trimmer
C8	120		5I120	D6-121			GP2K-120	19C29	RF Amp. Dec.
C9	1000		5D100	D6-102			GP2L-001	19C1	Conv. Plate Dec.
C10	100		5U100N750	TCN-100			N750L-100	29C18	RF Coupling
C11	5-3			829-3					Variable Trimmer
C12	30		5I20NPO	TCZ-20			NPOK-20		Osc. Grid Cap.
C13	10		5U10N750	TCN-10			N750K-10	19C4	Fixed Trimmer
C14	5-3			829-3					Variable Trimmer
C15A	1000		BPD-3X001	DD-2-102			813-2X001	29C7	RF Bypass
B	1000								Conv. Fil. Bypass
C	1000		5D100	D6-102			GP2L-001	19C1	Conv. Plate Dec.
C17	10	500		TCZ-10	5R5Q		NPOK-10	19C3	Fixed Trimmer
C18	1500		5T1500	D6-152	1W5D15		GP2L-0015	29C8	RF Bypass
C19	1500		5D1500	D6-152	1W5D15		GP2L-0015	29C8	AGC Filter
C20	1500		5I1500	D6-152	1W5D15		GP2L-0015	29C8	1st V. IF Dec.
C21	75		5T75N750	TCN-75			N750L-75		Fixed Trimmer
C22	150	500	910215	1468-00015	D6-151	5W5T15	GP2K-150	1FM-315	IF Coupling
C23	300	500	910225	1468-00025	D6-201	5W5T2	GP2K-200	1FM-32	AGC Filter
C24	35	300	5T1561	P468-35		GT2P25		2TM-P25	AGC Filter
C25	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	2nd V. IF Dec.
C26	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	RF Bypass
C27	35	500		1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C28	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	3rd V. IF Plate Dec.
C29	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	3rd V. IF Plate Dec.
C30	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	3rd V. IF Plate Dec.
C31	270	500	5T1514	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C32	30			5I47N750	TCN-51		N750L-47	19C9	Fixed Trimmer
C33	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	4th V. IF Plate Dec.
C34	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	4th V. IF Screen
C35	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	4th V. IF Cathode
C36	25		5I5E10	5I25	D6-250	5W5Q25	GP2K-25	19C27	IF Coupling
C37	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	V. Det.-AGC Fil.
C38	9		928007	5I15	TC2-4.7	5W5V5	NPOK-5	M5-55	V. Diode Filter
C39	47			5I47N750	TCN-47		N750L-47	19C9	Fixed Trimmer
C40	.05	400	923105	P488-05	D6-503	PTE485		6TM-S5	Video Coupling
C41	.01	400	923104	P488-01	D6-103	PTE481	821-01	4TM-S1	Bias Filter
C42	1500		5T1500	5I1500	D6-152	1W5D15	GP2L-0015	29C8	RF Bypass ▲
C43	.22	400	923108	P488-22		GT4P25		4TM-P22	Video Coupling
C44	.01	400	922015	P488-01	D6-103	PTE481	821-01	4TM-S1	Vert. Sweep Coupling
C45	.05	400	923105	P488-05	D6-503	PTE485		6TM-S5	Vert. Pulse Coupling
C46	5		928017	5I15	TC2-4.7	5W5V5	NPOK-5	M5-55	S. IF Coupling
C47	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	AVC Filter
C48	5000		928008	BPD-005	DD-502	1D5D5	811-005	29C1	S. IF Dec.
C49	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	S. IF Cath.
C50	68	500	910221	5I68	D6-680	5W5Q	GP2K-68	19C10	Limiter Grid Filter
C51	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	Limiter Dec.
C52	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	Limiter Screen
C53	50	500	910221	1468-00005	D6-500	5W5Q5	GP2K-50	1FM-45	RF Bypass
C54	.008	600	923109	P868-001	D6-102	PTE8D1	GP2L-001	6TM-D1	De-emphasis
C55	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	Discr. Fil. ▲

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C56	.01	600	923104	P488-01	D6-103	PTE481	821-01	4TM-S1	Audio Coupling
C57	.01	500	923104	P488-01	D6-103	PTE481	821-01	4TM-S1	Audio Coupling
C58	.001	600	923109	P868-001	D6-102	PTE8D1	GP2L-001	6TM-D1	De-emphasis
C59	.047	400	923025	P488-047	D7-503	PTE485		6TM-S48	Audio Coupling
C60	.005	600	923110	P868-005	D6-502	PTE8D5	811-005	6TM-D5	Output Plate
C61	.22	400	922018	P488-22		GT4P25		4TM-P22	Output Screen
C62	.047	400	923025	P488-047	D7-503	PTE485		6TM-S47	Sync. Coupling †
C63	110	500		1468-0001	D6-121	5W5T1	GP2K-120	1FM-31	Sync. Coupling ‡
C64	.01	400	922015	P488-01	D6-103	PTE481	821-01	4TM-S1	Sync. Coupling †
C65	.05	400	923105	P488-05	D7-503	PTE485		4TM-S5	Sync. Coupling
C66	.01	400	922015	P488-01	D6-103	PTE481	821-01	4TM-S1	Sync. Coupling
C67	.01	400	922015	P488-01	D6-103	PTE481	821-01	4TM-S1	Vert. Sync. Coupling
C68	.05	600	923107	P868-002	D6-202	PTE8D2	GP2M-002	6TM-D2	Integrator Net
C69	.005	400	923108	P868-005	D6-502	PTE8D5	811-005	6TM-D5	Integrator Net
C70	.005	400	923108	P868-005	D6-502	PTE8D5	811-005	6TM-D5	Integrator Net
C71	.05	400	923105	P488-05	D7-503	PTE485		6TM-S5	Vert. MV Cathode
C72	.005	800	923110	P868-005	D6-502	PTE8D5	811-005	6TM-D5	Vert. MV Feedback
C73	.047	600	922037	P868-047		PTE8E5		6TM-S47	Vert. Discharge
C74	.22	400	922018	P488-22		GT4P25		4TM-P22	Vert. Sweep Coupling
C75	.02	400	923084	P488-03	D7-203	PTE482		4TM-S2	Fixed Trimmer
C76	82	500	910023	1468-0001	D6-820	5W5T1	GP1K-82	1FM-31	Hor. Sync. Coupling
C77	82	500	910023	1468-0001	D6-820	5W5T1	GP1K-82	1FM-31	Horiz. Feedback
C78	.05	600	923105	P868-05	D7-503	PTE685		6TM-S5	AFC Filter
C79	.5	300	923103	P288-5		GT2P5		2TM-P5	AFC Filter
C80	.02	200	923084	P488-02	D7-203	PTE482		2TM-S2	AFC Filter
C81	.047	400	922025	P488-047	D7-503	PTE485		4TM-S47	Hor. AFC Plate
C82	330	500	910035	1469-0003	D6-331	5R5T3	GP2K-330	MS-33	Hor. Osc. Grid
C83	.01	600	922041	P688-01		PTE681		6TM-S1	Fixed Trimmer
C84	820	500	910218			1W573		MS-38	Hor. Discharge
C85	.01	400	922025	P488-01	D6-103	PTE481	821-01	4TM-S1	RF Bypass
C86	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	RF Bypass
C87	470	500	910017	1468-0005	D6-471	5W5T5	GP2K-470	1FM-35	Hor. Sweep Coupling
C88	.047	600	922023	P688-047	D7-503	PTE685		6TM-S47	Hor. Output Screen
C89	.25	200	923080	P488-25		GT3P25		2TM-P25	Hor. Output Cathode
C90	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	Hor. Output Cathode
C91	.022	1000	922052	P1068-023		PTE1682		MB-822	Damper Filter
C92	.068	1000	923051						Damper Filter
C93	500	20000	923086	HV20C	TV2-503				H. V. Filter
C94	1500		928006	5I1500	D6-152	1W5D15	GP2L-0015	29C8	Filament Bypass
C95	.047	400	922016	P488-047	D7-503	PTE485		4TM-S47	Line Filter
C96	.047	400	922101	P488-047	D7-503	PTE485		4TM-S47	Line Filter

* Not used in all models.
† Used in models coded triangle 2 and higher.
‡ Used in models coded triangle 1 and below.
¤ Models coded triangle 1 and lower use 220MMF in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1500Ω	½	3901G7			5BD-854-S	Contrast Control - Front {See Note 1. Volume Control And SW - Rear}
B	1Meg	½					
R2A	500Ω	½	3S00G4	Q11-123	AG-44-8	AN-31	Focus Control
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach to R2A Per Instructions
R3A	100KΩ	½	390162	Q11-128	AG-49-8	AN-40	Brightness Control
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach to R3A Per Instructions
R4A	1Meg	½	3G0U58	Q11-137	AG-61-8	AN-69	Vert. Hold Control
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach to R4A Per Instructions
R5A	50Ω	½	390164	Q11-123	AG-44-8	B-31	Horizontal Control
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach to R5A Per Instructions
R6A	2Meg	½	3Q0142	Q11-139	AG-63-8	AN-75	Vertical Size Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R6A Per Instructions
R7	5000Ω	2	390143	W-5000	43-5000	VK-135	Vert. Linearity Control - Wire Wound

Note 1. Some models use control with part # 390187 in this application.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE STATED
R8	390Ω	½		BTS-3900	Antenna Coil Shunt
R9	47KΩ	½		BTS-47K	AGC Network
R10	10KΩ 20%	½			RF Coil Shunt
R11	2200Ω 20%	½		BTS-2200	RF Amp. Decoupling
R12	4700Ω	½		BTS-4700	Mixer Grid
R13	220KΩ 20%	½			Mixer Grid
R14	10KΩ 20%	½			Mixer Plate Decoupling
R15	18KΩ	½			1st Video IF Transformer Primary Shunt
R16	10KΩ 20%	½			Osc. Grid
R17	4700Ω	½		BTS-4700	Osc. Plate
R18	5600Ω	½	340672		1st Video IF Transformer Secondary Shunt
R19	1000Ω	½	350492	BTS-1000	AGC Network
R20	1000Ω	½	350492	BTS-1000	AGC Network
R21	220Ω	½	340332	BTS-220	Tuner Decoupling
R22	68Ω	½	340212		1st Video IF Amp. Cathode
R23	1000Ω	½	350492	BTS-1000	1st Video IF Amp. Decoupling
R24	10KΩ	½	340732		2nd Video IF Transformer Shunt
R25	10KΩ	½	340732		2nd Video IF Amp. Grid
R26	68Ω	½	340212		2nd Video IF Amp. Cathode
R27	1000Ω	½	350492	BTS-1000	2nd Video IF Amp. Decoupling
R28	5600Ω	½	340672		Grid Choke Shunt
R29	220Ω	½	340332	BTS-220	3rd Video IF Amp. Cathode
R30	1000Ω	½	350492	BTS-1000	3rd Video IF Amp. Screen
R31	2700Ω	½	340592	BTS-2700	3rd Video IF Amp. Plate
R32	1000Ω	½	350492	BTS-1000	3rd Video IF Amp. Plate Decoupling
R33	220Ω	½	340332	BTS-220	4th Video IF Amp. Cathode
R34	1000Ω	½	350492	BTS-1000	4th Video IF Amp. Screen
R35	1000Ω	½	350492	BTS-1000	4th Video IF Amp. Plate Decoupling
R36	4700Ω	½	340852	BTS-4700	Video Det. Diode Load
R37	1000Ω	½	350492	BTS-1000	AGC Network
R38	1Meg	½	351212	BTS-1Meg	AGC Network
R39	100KΩ	½	340972	BTS-100K	AGC Network

RESISTORS (CONT.)

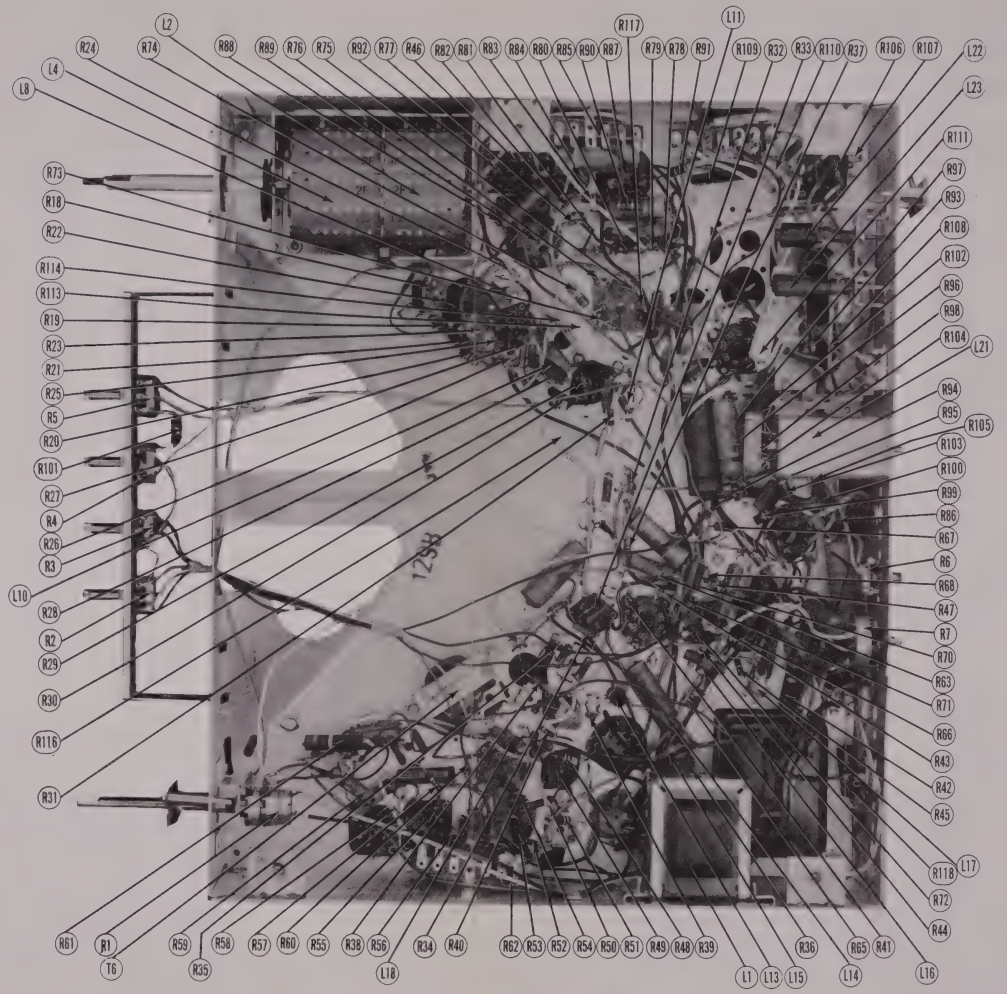
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R40	22KΩ	½	340812	BTS-22K	AGC Network
R41	1Meg 20%	½	351312	BTS-1Meg	Video Amp. Grid
R42	5600Ω 5%	2	397066	BTB-5600-5%	Video Amp. Plate
R43	150KΩ	½	370152	BTS-150K	Bias Network
R44	22KΩ	½	340812	BTS-22K	Video Peaking Coil Shunt
R45	100KΩ 20%	½	340972	BTS-100K	Retrace Blanking Network
R46	100KΩ 20%	½	340972	BTS-100K	Retrace Blanking Network
R47	220KΩ	½	341052	BTS-220K	Picture Tube Cathode
R48	1000Ω 20%	½	350492	BTS-1000	Bias Network
R49	220Ω 20%	½	340332	BTS-220	Sound IF Amp. Cathode
R50	1Meg 20%	½	351212	BTS-1Meg	AVC Network
R51	1000Ω 20%	½	350492	BTS-1000	Bias Network
R52	47K	½	340692	BTS-47K	Limiter Grid
R53	39KΩ	2		BTS-39K	Limiter Decoupling - See Note 2
R54	10KΩ 20%	½	340732	BTS-10K	Voltage Divider
R55	100KΩ	½	340972	BTS-100K	Disc. Diode Load
R56	100KΩ	½	340972	BTS-100K	Disc. Diode Load
R57	68KΩ	½	340932	BTS-68K	De-emphasis
R58	10Meg 20%	½	351452	BTS-10Meg	AF Amp. Grid
R59	470KΩ	½	341132	BTS-470K	A.F Amp. Plate
R60	470KΩ 20%	½	341133	BTS-470K	Output Grid
R61	560Ω	2		BTB-560	Output Cathode - See Note 3
R62	5600Ω	½	340672	BTS-5600	Output Screen
R63	220KΩ	½	341063	BTS-220K	Voltage Divider
R64	30KΩ	5	394004		Bleeder - See Note 7
R65	10KΩ 20%	½	340732	BTS-10K	1st Sync. Amp. Grid - See Note 11
R66	47KΩ	½	340892	BTS-47K	1st Sync. Amp. Plate - See Note 4
R67	10KΩ 20%	½	340732	BTS-10K	Isolation
R68	100KΩ	½	340972	BTS-100K	Bias Network - See Note 8
R69	3.3Meg	½	341332	BTS-3.3Meg	Sync. Sep. Grid - See Note 9
R70	2.2Meg	½	341292	BTS-2.2Meg	Sync. Sep. Grid - See Note 10
R71	10KΩ	½	340732	BTS-10KΩ	Sync. Sep. Plate
R72	22KΩ	½	340812	BTS-22KΩ	Voltage Divider
R73	330KΩ	½	341092	BTS-330K	2nd Sync. Amp. Grid
R74	10KΩ	½	370732	BTA-10K	2nd Sync. Amp. Plate
R75	1Meg 20%	½	351312	BTS-1Meg	2nd Sync. Amp. Grid
R76	2200Ω	½	340572	BTS-2200	2nd Sync. Amp. Plate
R77	220Ω	½	340332	BTS-220	2nd Sync. Amp. Plate
R78	22KΩ	½	340812	BTS-22K	Voltage Divider
R79	22KΩ	½	340812	BTS-22K	Integrator
R80	8200Ω	½	340712	BTS-8200	Integrator
R81	8200Ω	½	340712	BTS-8200	Integrator
R82	2200Ω	½	340572	BTS-2200	Vert. Osc. Cathode
R83	150KΩ 5%	1	371052	BTA-150K-5%	Vert. Osc. Plate
R84	470KΩ	½	341132	BTS-470K	Vert. Amp. Grid
R85	470KΩ	½	341132	BTS-470K	Vert. Amp. Plate
R86	220KΩ	½	341052	BTS-220K	Decoupling
R87	10KΩ	½	340732	BTS-10K	Vert. Peaking
R88	3.3Meg	½	341332	BTS-3.3Meg	Vert. Output Grid
R89	470Ω	½	340412	BTS-470	Vert. Output Cathode
R90	470Ω	1	370412	BTA-470	Vert. Output Plate Decoupling
R91	470Ω	1	370412	BTA-470	Vert. Output Plate Decoupling
R92	220KΩ	½	341052	BTS-220K	Damping
R93	150KΩ	½	341032	BTS-150K	Voltage Divider
R94	3900Ω	½	340632	BTS-3900	Horiz. AFC Filter
R95	330KΩ	½	341092	BTS-330K	Horiz. AFC Filter
R96	820KΩ	½	341192	BTS-820K	Horiz. AFC Grid
R97	82KΩ 5%	1	370952	BTA-82K-5%	Horiz. AFC Cathode
R98	330KΩ 5%	1	381092	BTA-330K-5%	Horiz. AFC Cathode
R99	100KΩ	1	370972	BTA-100K	Horiz. AFC Plate
R100	10KΩ	½	340732	BTS-10K	Decoupling
R101	120KΩ	1	370992	BTA-120K	Horiz. Divider
R102	150KΩ 5%	1	381032	BTA-150K-5%	Horiz. Osc. Grid
R103	82KΩ	1	370952	BTA-82K	Horiz. Osc. Plate
R104	8200Ω	½	340712	BTS-8200	Horiz. Osc. Transformer Shunt
R105	150KΩ 20%	½	341032	BTS-150K	Horiz. Feedback
R106	2.2Meg	½	341292	BTS-2.2Meg	Bias Network
R107	68Ω	½	340212		Parasitic Suppressor
R108	1Meg 20%	½	351212	BTS-1Meg	Horiz. Output Grid
R109	100Ω	2	397037	BW-2-100	Horiz. Output Cathode
R110	11KΩ	4	394113		Horiz. Output Screen
R111	750Ω	10	394108	1 3/4A-750	Horiz. Bias Coil Shunt
R112	1Meg 20%	1	381212		H. V. Filter
R113	1700Ω	5			Voltage Divider - See Note 5
R114	9000Ω	5		1 3/4A-9000	Voltage Divider - See Note 6
R115	8000Ω	10	394060-8	1 3/4A-8000	Voltage Divider - See Note 7
R116	2000Ω	5		1 3/4A-2000	Voltage Divider - See Note 5
R117	15000Ω	1	340532	BTS-1500	2nd Sync. Amp. Cathode
R118	100KΩ	1	370972	BTA-100K	Isolation

Note 2. Some models use 27KΩ resistor in this application.
Note 3. Some models use 470Ω resistor in this application.
Note 4. Some models use 10KΩ resistor in this application.
Note 5. Some models use 1000Ω resistor in this application.
Note 6. Some models use 4000Ω resistor in this application.
Note 7. Not used in all models.
Note 8. Not used when R70 is 330K.
Note 9. Used only when R70 is 330K.
Note 10. R70 is 330KΩ when R69 is used.
Note 11. Some models use 47KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	CHICAGO PART No.
T1	117VAC ④ 2.4A	720VCT ⑤ .225ADC	5V ⑥ 3A SEC. 4 6.3V ⑦ 6.2A	6.3V ⑥ 1.2A SEC. 5 6.3V ⑧ 3A	730031	TP-370 and F633 ③	P-3067	

③ Mount beneath chassis.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

HUDSON
MODEL 350

HUDSON
MODEL 350

HUDSON MODEL 350

TRADE NAME	Hudson Model 350
MANUFACTURER	Hudson Elect. Corp., 110 E. 3rd St. Mt. Vernon, New York
TYPE SET	AC Operated Automatic Record Player With 3 Tube Audio Amplifier
TUBES (THREE)	Types 12J5GT AF Amp., 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .20 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HUDSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	AF Amp.	12J5GT	12J5GT	6Q	
V2	Power Output	50L6GT	50L6GT	7AC	
V3	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HUDSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	200		AFH101010D4A		UP55515C		TVL-4425	▲ Filter
B	50	200							■ Filter
C	50	150							▲ Filter
D	20	25							Output Cathode
C2	.0005	200		1468-0005	D6-501	5W5T5	GP2K-500	1FM-35	Tone Comp.
C3	.01	400		P488-01	D6-103	PTE4S1	821-01	4TM-S1	Audio Coupling
C4	.005	600		P688-005	D6-502	PTE6D5	811-005	6TM-D5	Tone Comp.
C5	.1	200		P288-1	DF-104	PTE4P1		2TM-P1	Line Isolation

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HUDSON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½		Q13-133	AG-60-Z	B-60-S	Volume control
B	Shaft			Not req.	FS-3	Not req.	Attach to R1A per instructions
C	Switch			76-1	SWB	Not req.	Attach to R1A per instructions
R2A	1Meg	½		Q13-137	AG-63-Z	B-70	Tone control
B	Shaft			Not req.	FS-3	Not req.	Attach to R2A per instructions

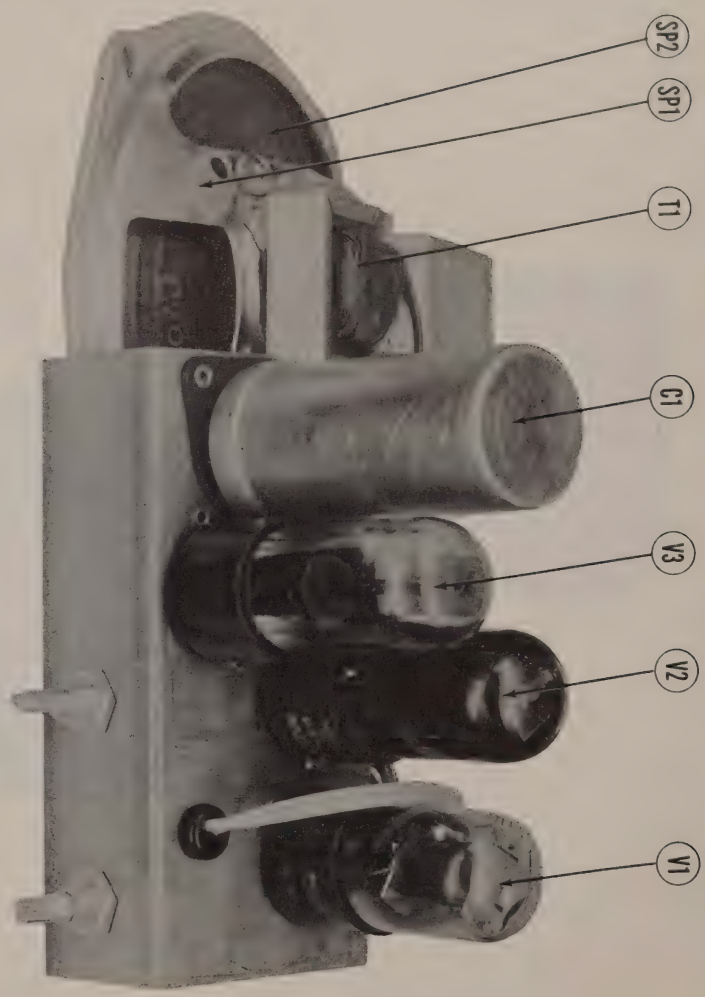
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HUDSON PART No.	IRC PART No.	IDENTIFICATION CODES
R3	10Meg	½		BTS-10Meg	Tone Compensation
R4	470KΩ	½		BTS-470K	AF Amp. Grid
R5	2500Ω	½		BTS-2700	AF Amp. Cathode
R6	120KΩ	½		BTS-120K	AF Amp. Plate
R7	150Ω	½		BTS-150	Output Cathode
R8	1.2Meg	½		BTS-1.2Meg	Feedback
R9	1200Ω	1		BTA-1200	Filter
R10	500Ω	1		BTA-500	Filter
R11	33Ω	1			Surge Limiter
R12	110Ω	2		BW-2-110	Filament String - Wire Wound

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: HUDSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	2.2KΩ	4Ω	163Ω	.5Ω	2123-1	A-3876 ①	A-3025 ①	R0-2 ①	① Bend mounting tabs down, fill out slots, mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

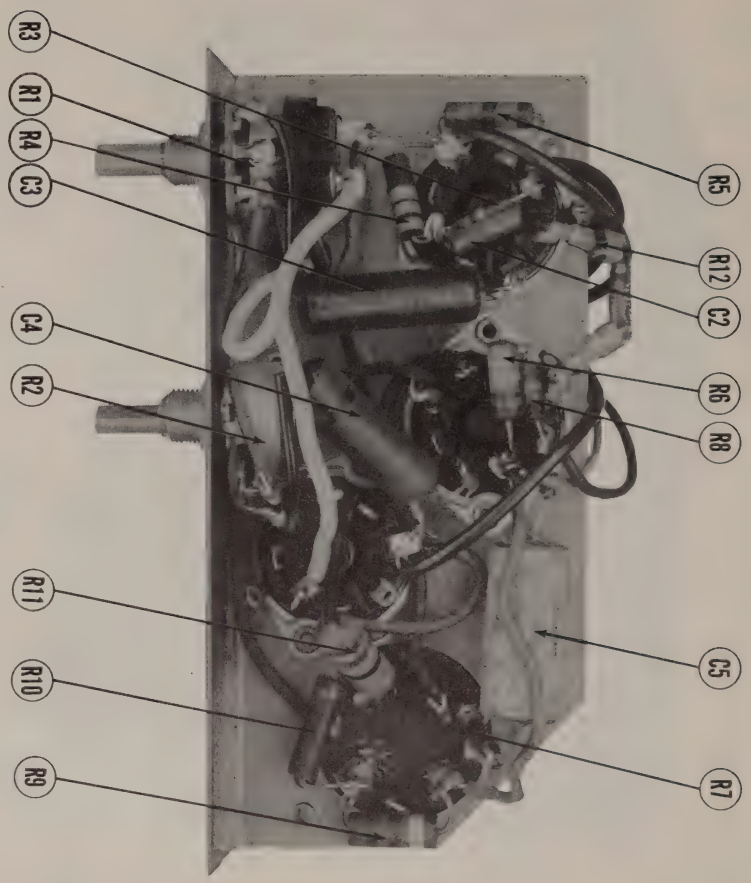
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			HUDSON PART No.	VIKING PART No.	QUAM PART No.	
	FIELD	V. C. IMP.				
SP1	PM	4Ω	63C-15	6J4	6A31	
	CONE DIA.	V. C. DIA.				
SP2	5 7/8	9/16				

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	HUDSON PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		ACD-J	A-1 A-3	W22AB	A65MG A62A			

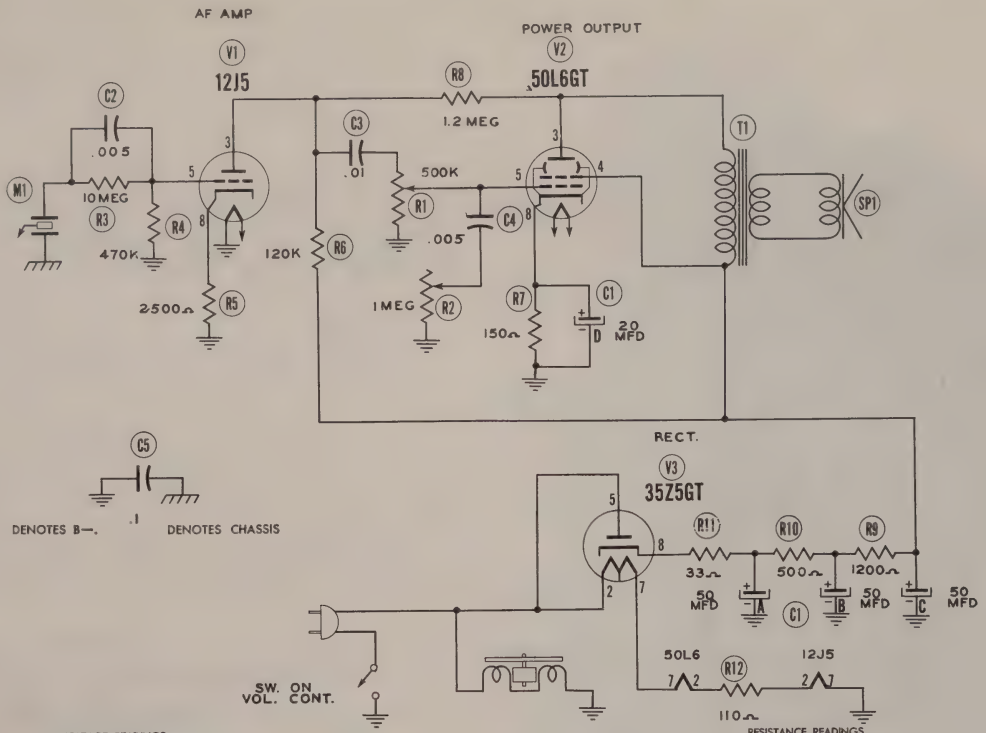
ASTATIC AND SHURE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

CHASSIS—BOTTOM VIEW



HUDSON MODEL 350

HUDSON MODEL 350



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12J5GT	0V	13VAC	25VDC	Inf.	0V	Inf.	0V	1.2VDC
V 2	50L6GT	0V	30VAC	65VDC	70VDC	0V	Inf.	80VAC	4.7VDC
V 3	35Z5GT	0V	117VAC	105VAC	Inf.	117VAC	Inf.	80VAC	130VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12J5GT	10Meg	12Ω	†120KΩ	Inf.	470KΩ	Inf.	0Ω	2.5KΩ
V 2	50L6GT	Inf.	120Ω	†1.9Ω	†1.7KΩ	0Ω	Inf.	170Ω	150Ω
V 3	35Z5GT	Inf.	210Ω	200Ω	Inf.	210Ω	Inf.	170Ω	50KΩ

† MEASURED FROM PIN 8 OF V3

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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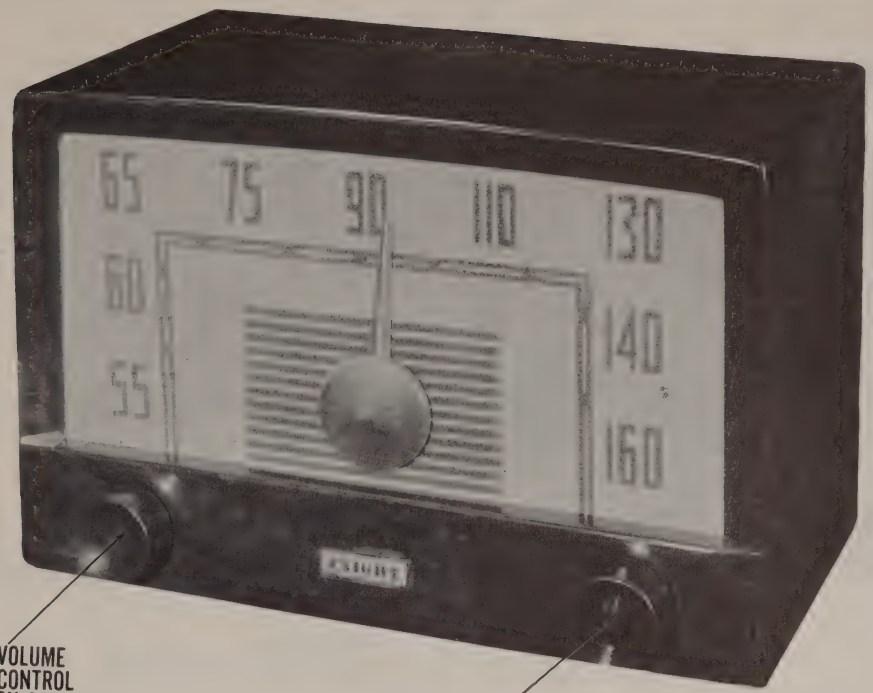
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

KNIGHT
MODEL 6H-580



KNIGHT
MODEL 6H-580

TRADE NAME	Knight, Model 6H-580
SUPPLIER	Allied Radio Corp., 833 W. Jackson Blvd., Chicago 7, Illinois
TYPE SET	AC-DC Operated Superheterodyne Receiver With Loop Antenna
TUBES (SIX)	Types 12AU6 Mixer, 6C4 Oscillator, 12BA6 IF Amp., 12AV6 Det.-AVC-AF, 50C5 Power Output, 35W4 Rectifier
POWER SUPPLY	105-120 Volts AC-DC RATING .24 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap fully closed and set pointer parallel with base of dial.
Use isolation transformer if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator on rear section of tuning gang.	455KC (400 ∿ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output	"	A6	"

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PARTS LIST AND DESCRIPTIONS

KNIGHT MODEL 6H-580

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Mixer	12AU6	12AU6	7BK	
V2	Oscillator	6C4	6C4	6BG	
V3	IF Amp.	12BA6	12BA6	7BK	
V4	Det.-AVC-AF	12AV6	12AV6	7BT	
V5	Power Output	50C5	50C5	7BZ	
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: KNIGHT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	N-5051	PRS150/40-40		EDL-4415		TVA-2445	Filter Blue
B	40	150							Filter red
C2	.05	200	N-1345	P288-05	DF-503	PTE4S5		2TM-S5	Isolation
C3	.05	200	N-1345	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C4	.01	400	N-1344	P488-01	D6-103	PTE4S1	821-01	4TM-S1	RF Coupling
C5	.05	200	N-1345	P288-05	DF-503	PTE4S5		2TM-S5	Conv. Dec.
C6	100		N-6015	SI100	D6-101	5W5T1	GP1K-100	19C11	Diode RF Filter
C7	.005	600	N-4894	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Audio Coupling
C8	250		N-6488	SI250	D6-251	5W5T25	GP2K-250	1FM-325	AF Amp. Plate
C9	.01	400	N-1344	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Audio Coupling
C10	.02	400	N-1376	P488-02	DF-203	PTE4S2		4TM-S2	Output Plate Bypass
C11	.08	200	N-8092	P288-1	DF-104	PTE4P1		72P52	Line Isolation
C12	.05	400	N-1346	P488-05	DF-503	PTE4S5		4TM-S5	Rect. Plate Bypass

CONTROLS

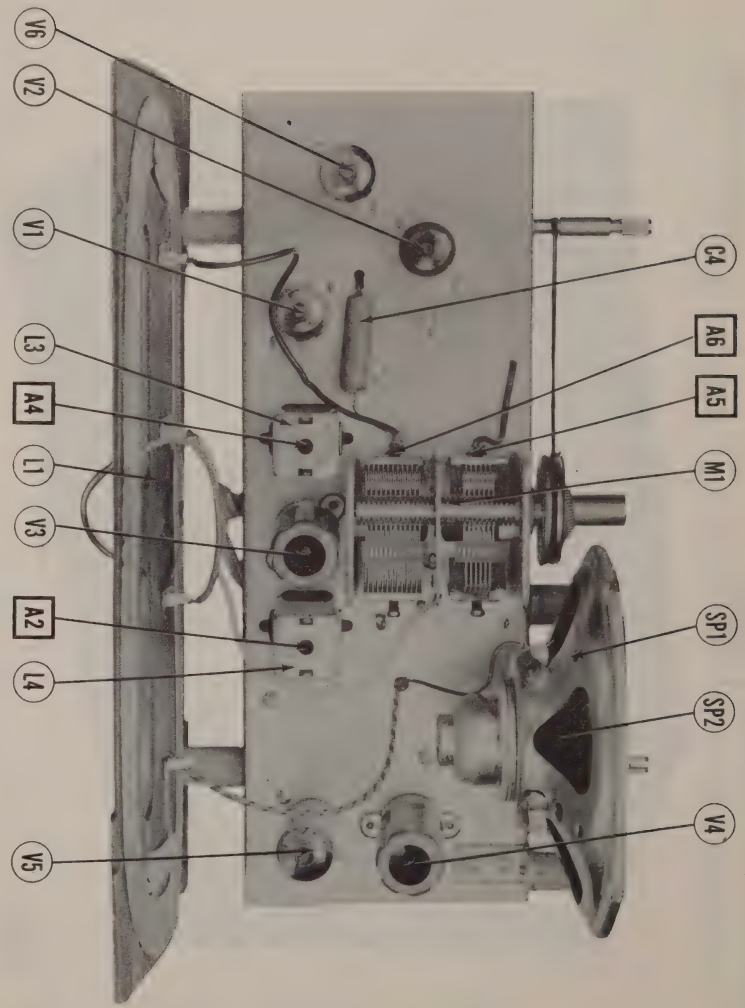
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: KNIGHT PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	N7984	Q13-133	AM-60-Z	AN-60	Volume control
B	Shaft		Not req.	Not req.	KSS-3	AK-4	Attach to R1A per instructions
C	Switch		Not req.	76-1	SW-A	K-155	Attach to R1A per instructions.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: KNIGHT PART No.	IRC PART No.	IDENTIFICATION CODES
R2	2.7Meg	½			Conv. Grid - See Note 1.
R3	39KΩ	½			Conv. Decoup - See Note 2.
R4	39KΩ	½			Osc. Grid - See Note 2.
R5	68Ω	2	N-6485		IF Amp. Cathode
R6	1Meg	½	N-1262	BTB-1Meg	AVC Network
R7	6.8Meg	½	N-4028	BTS-6.8Meg	AF Amp. Grid
R8	330KΩ	½		BTS-330K	AF Amp. Plate - See Note 3.
R9	470KΩ	½	N-4027	BTS-470K	Output Grid
R10	180Ω	1	N-4067	BTS-180	Output Cathode - See Note 4
R11	1000Ω	1	N-3341	BTS-1000	Filter - See Note 5.

Note 1. Some models use 3.3meg resistor in this application.
Note 2. Some models use 47KΩ resistor in this application.
Note 3. Some models use 220KΩ resistor in this application.
Note 4. Some models use resistors in parallel to obtain desired value.
Note 5. Some models use resistors in series to obtain desired value.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		KNIGHT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2KΩ	3Ω	160Ω tap @ 6Ω	.3Ω	N-8001	A-3330	A-3031	RO-3	

SPEAKER

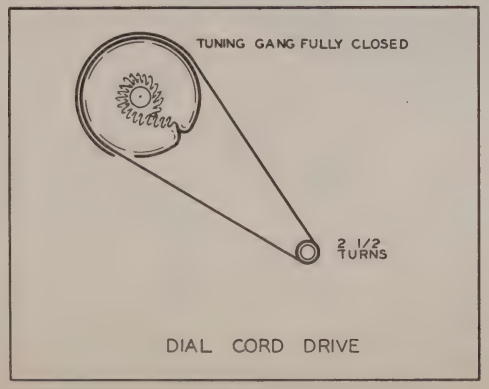
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			KNIGHT PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-105		
SP1	PM	3Ω	N-7980	Mod. P5-X	5A07	
	CONE DIA.	V. C. DIA.				
SP2	4 1/2"	9/16"				

R F COILS

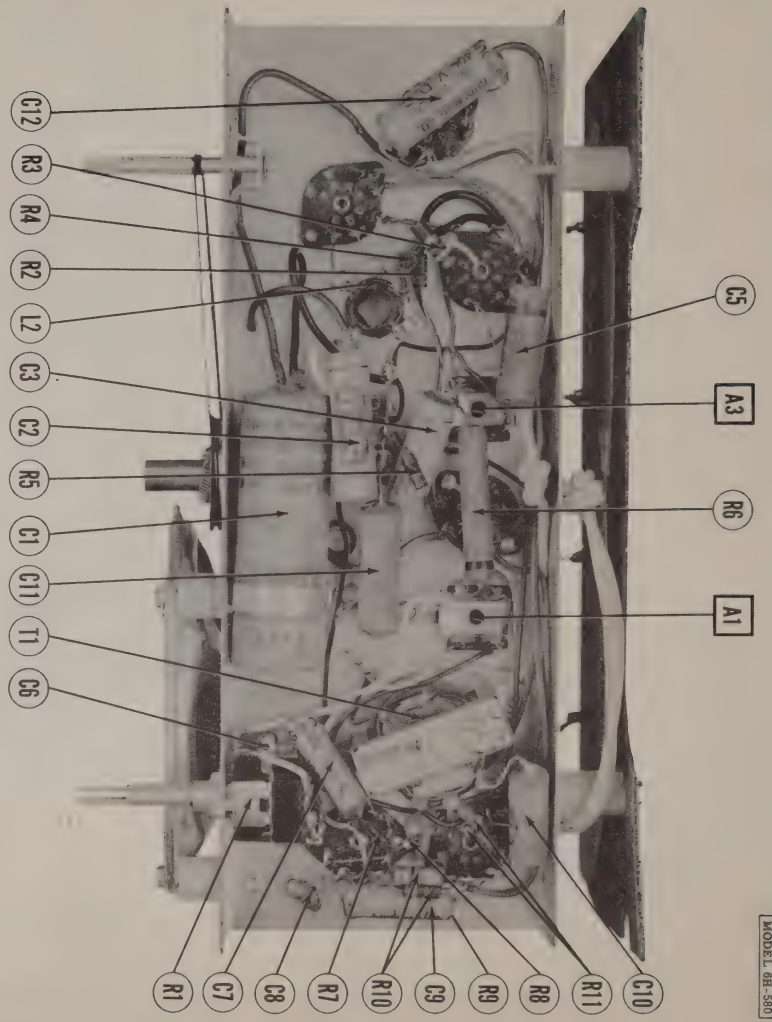
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	KNIGHT PART No.	MEISSNER PART No.	
L1	Loop Antenna	.2Ω	2.4Ω	N-8002		Includes Cabinet Back
L2	Osc. Coil	5.4Ω	8.2Ω	N-7982	14-1073	
L3	1st IF	18Ω	18Ω	N-7981	16-6758	
L4	2nd IF	18Ω	18Ω	N-7981	16-6758	

MISCELLANEOUS

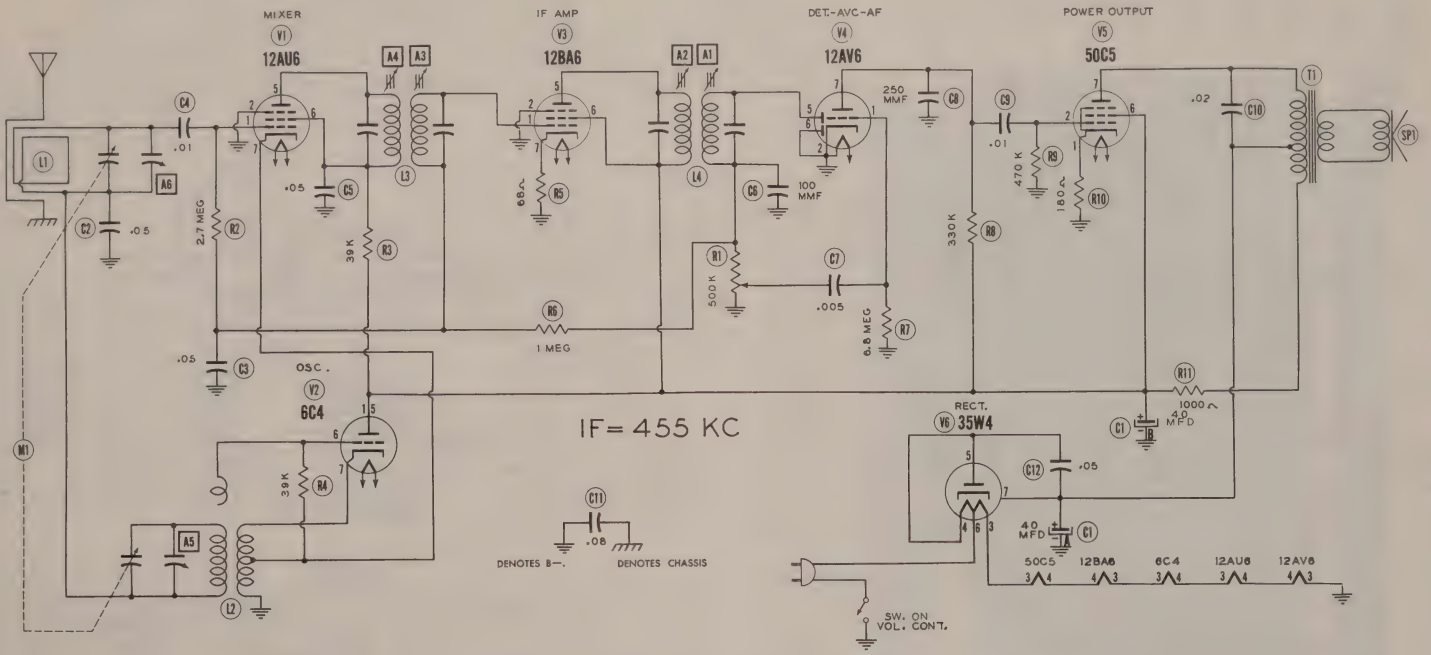
ITEM No.	PART NAME	KNIGHT PART No.	NOTES
M1	2 gang var. cap	N-8045	(23-397MMF, 20-153MMF)
	Cabinet	#315	Model 607-315
	Cabinet	#314	Model 607-314
	Knob	N-8004	Model 607-315
	Knob	N-8003	Model 607-314
	Dial Pointer	N-7994	



CHASSIS—BOTTOM VIEW



KNIGHT MODEL 6H-580



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12AU6	-2VDC	0V	24VAC	12VAC	50VDC	50VDC	0V
V 2	6C4	100VDC	0V	30VAC	24VAC	100VDC	8-28VDC	0V
V 3	12BA6	-.4VDC	0V	30VAC	40VAC	100VDC	100VDC	.8VDC
V 4	12AV6	-.7VDC	0V	0V	12VAC	-1.4VDC	0V	.65VDC
V 5	50C5	7.3VDC	0V	87VAC	40VAC	0V	100VDC	110VDC
V 6	35W4	0V	0V	87VAC	112VAC	112VAC	117VAC	115VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12AU6	4.2Meg	0Ω	25Ω	13Ω	†40KΩ	†40KΩ	.5Ω
V 2	6C4	†1KΩ	Inf.	30Ω	25Ω	†1KΩ	39KΩ	5.4Ω
V 3	12BA6	1.5Meg	0Ω	30Ω	40Ω	†1KΩ	†1KΩ	68Ω
V 4	12AV6	6.8Meg	0Ω	0Ω	13Ω	500KΩ	0Ω	†330KΩ
V 5	50C5	180Ω	470KΩ	90Ω	40Ω	470KΩ	†1KΩ	†155Ω
V 6	35W4	Inf.	Inf.	90Ω	120Ω	120Ω	130Ω	30KΩ

† MEASURED FROM PIN 7 OF V6

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

OLYMPIC MODELS
752, U, 753, U, 755, U,
764, U, 767

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MODEL 752

OLYMPIC MODELS
752, U, 753, U, 755, U,
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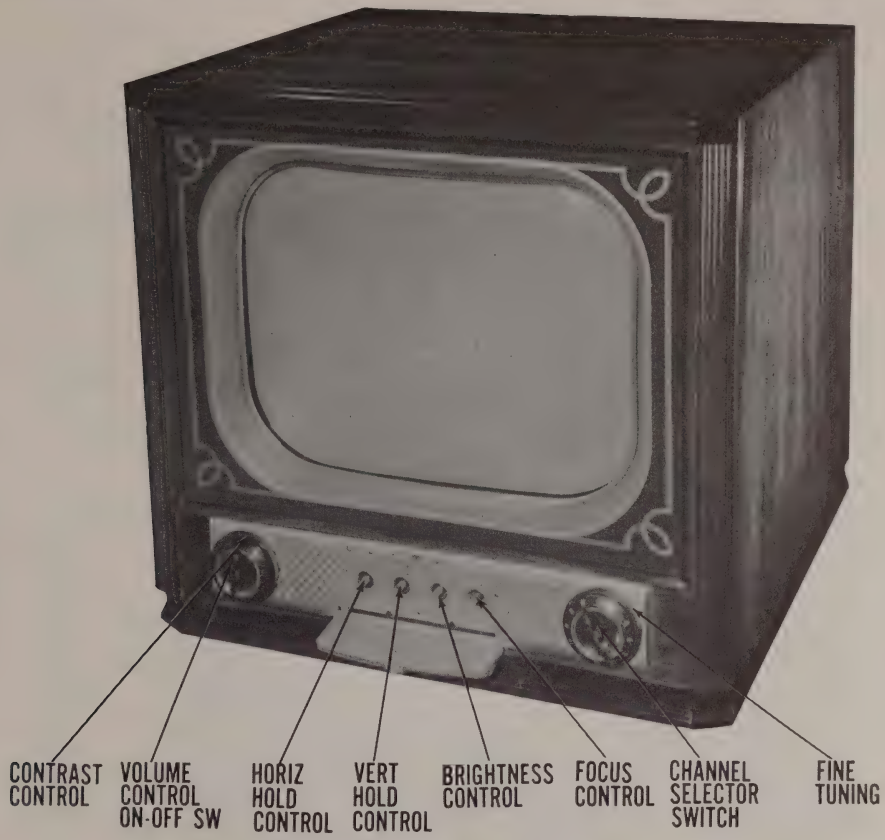
Date 3/51 Set No. 126—Folder No. 8

OLYMPIC MODELS
752, U, 753, U, 755, U, 764, U, 767

OLYMPIC MODELS
752, U, 753, U, 755, U, 764, U, 767



OLYMPIC MODEL 752

TRADE NAME	Olympic, Models 752, U, 753, U, 755, U, 764, U, 767
MANUFACTURER	Olympic Radio And Television, Inc., 34-01 38 Ave., Long Island City (1), New York
TYPE SET	Television Receiver
TUBES	Twenty
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	2 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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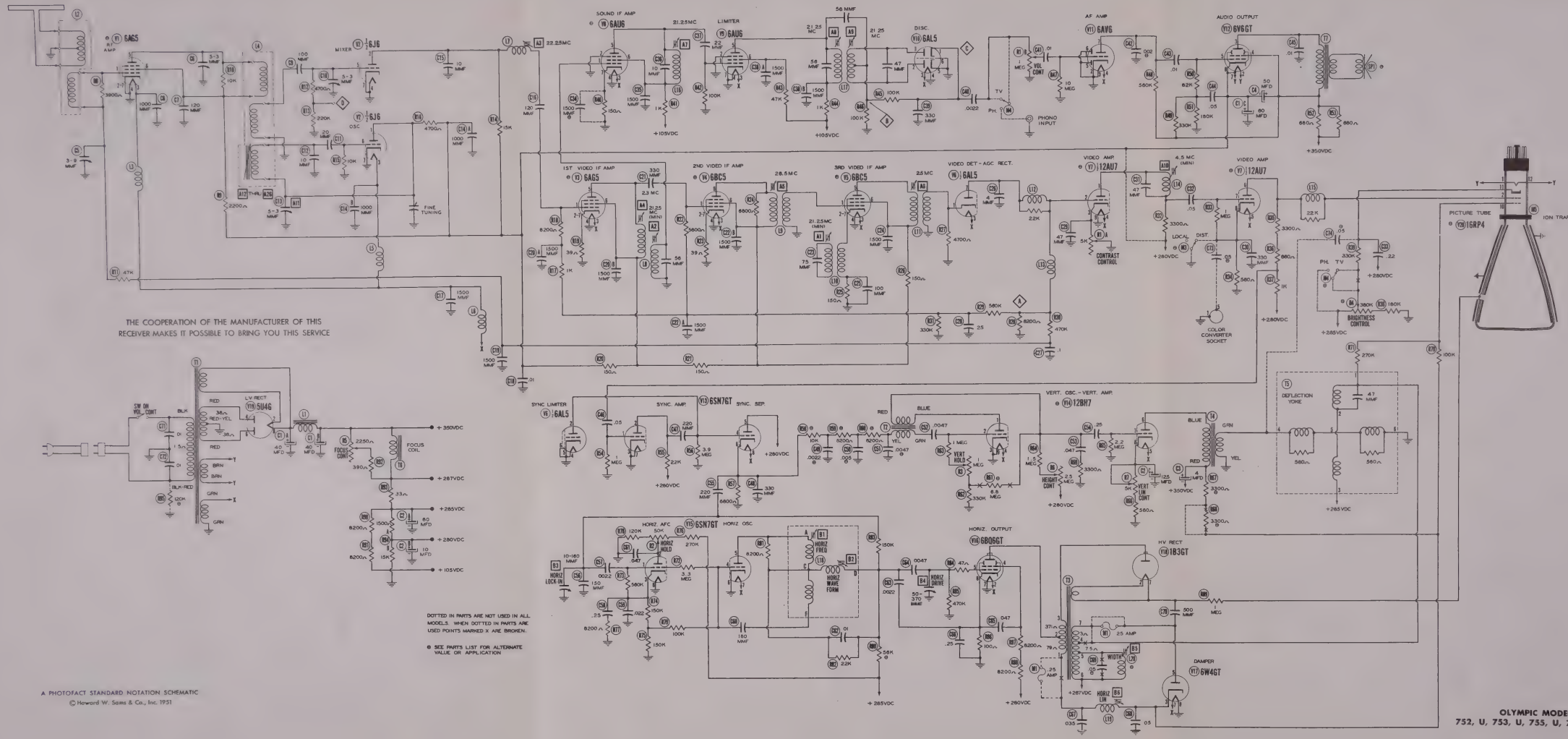
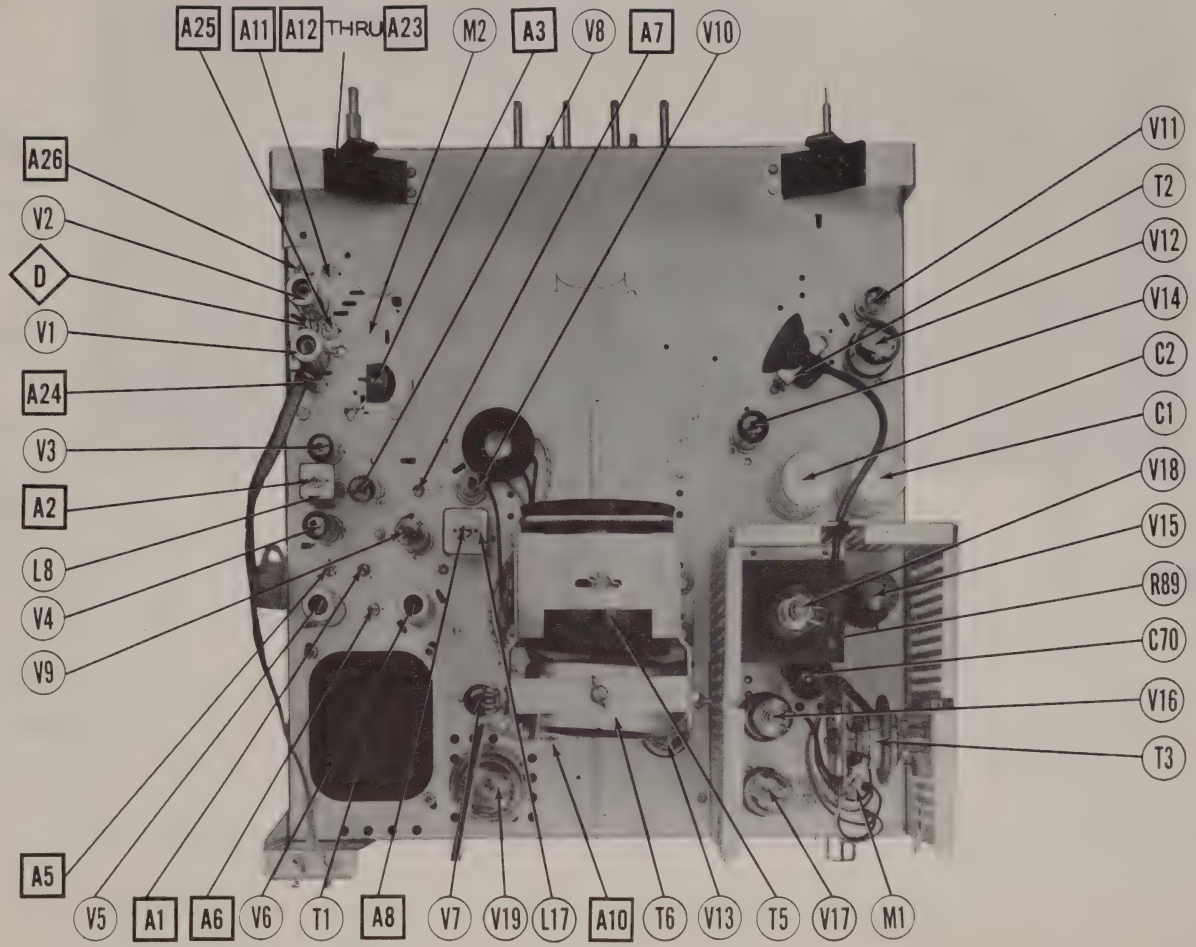
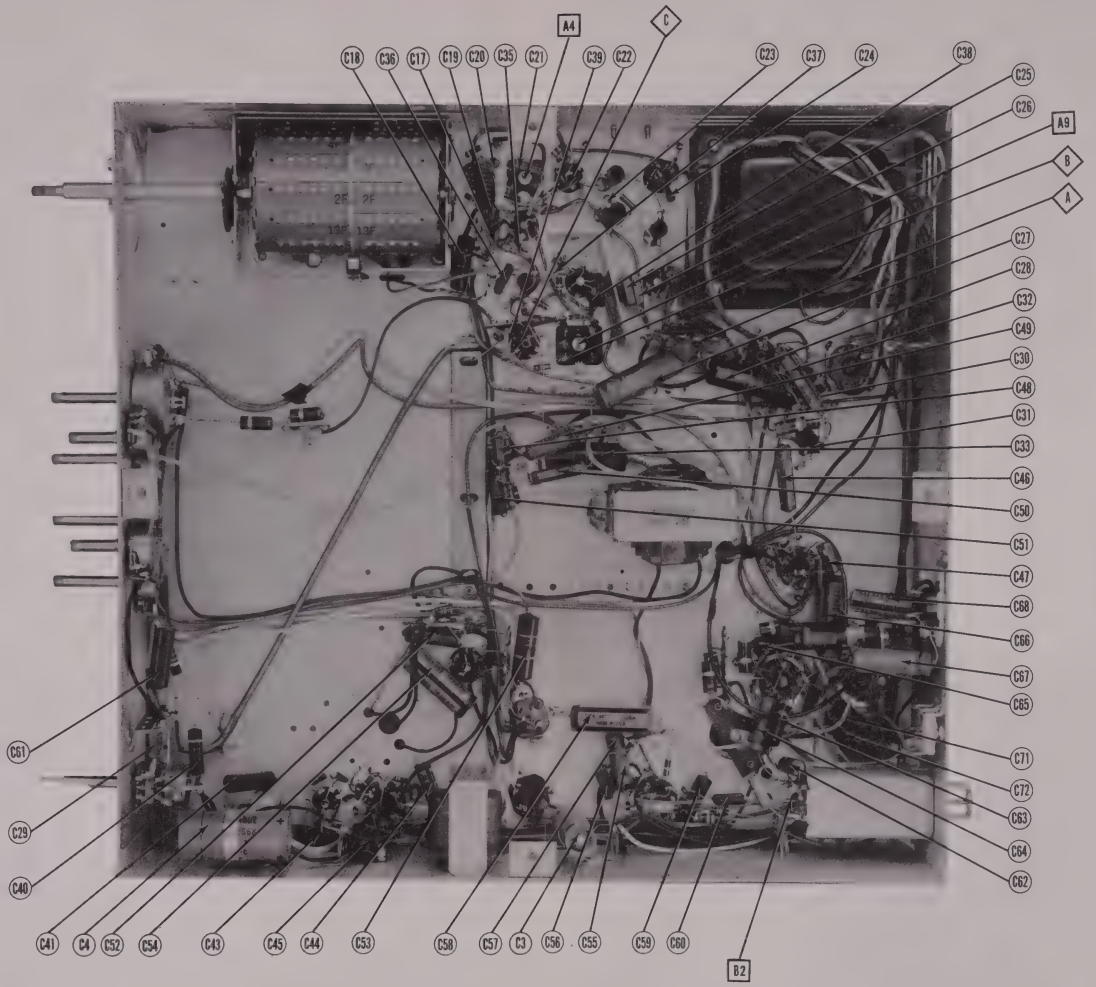


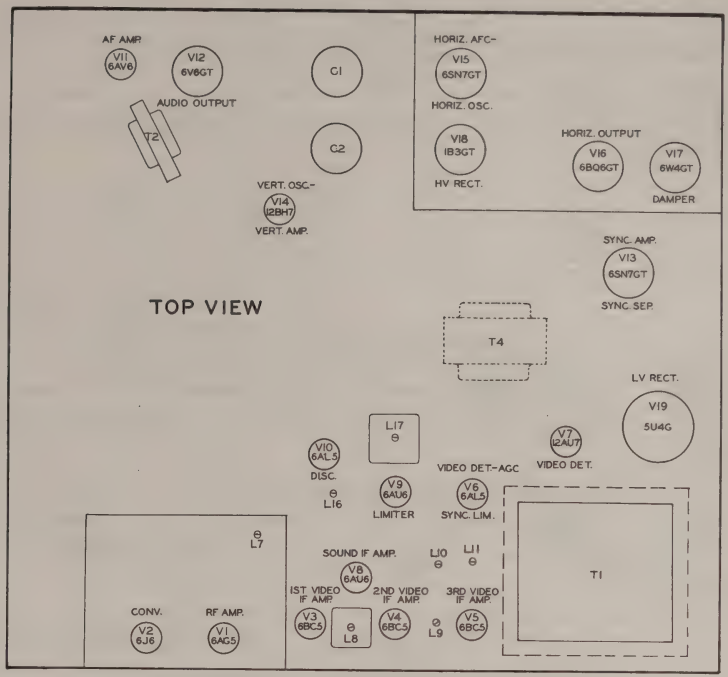
OLYMPIC MODELS
752, U, 753, U, 755, U, 764, U, 767

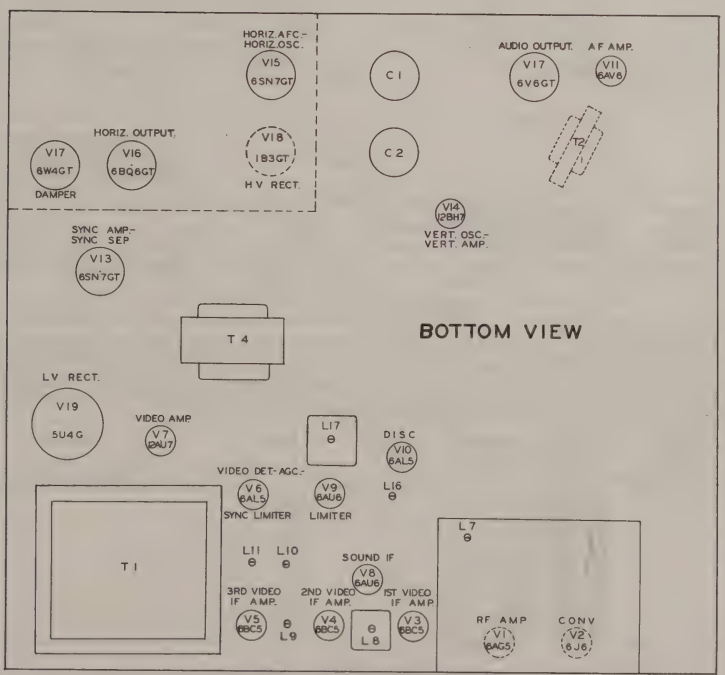


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V15) from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and prevent erroneous indications. Connect the negative lead of a 1 1/2 volt battery to the junction of R29 and C28, connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.25MC (Unmod.)	Any	D C probe to Point (A). Common to chassis.	A1, A2	Adjust for MINIMUM deflection. Short A1 with a clip lead while adjusting A2.
2.	"	"	22.25MC	"	"	A3	Adjust for maximum deflection.
3.	"	"	23.0MC	"	"	A4	"
4.	"	"	26.5MC	"	"	A5	"
5.	"	"	25.0MC	"	"	A6	Adjust for maximum deflection. If oscillations occur during alignment, temporarily detune A6 to the point where the slug projects 1/4" above the mounting clip.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	23MC (10MC SWP)	21.25MC 22.25MC 25.75MC	Any	Vert. amp. to Point (A). Low side to chassis.		Check for response curve similar to fig. 1. If necessary retouch A3 thru A6 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.25MC (Unmod.)	Any	DC probe thru 100KΩ to Point (B) Common to chassis.	A7, A8	Adjust for maximum deflection.
8.	"	"	"	"	DC probe thru 100KΩ to Point (C). Common to chassis.	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.25MC (450KC SWP)	21.25MC	Any	Vert. amp. thru 22KΩ to Point (B). Low side to chassis.	A7, A8	Adjust for maximum amplitude and symmetry as per figure 2.
8.	"	"	"	"	"	Vert. amp. to Point (C). Low side to chassis.	A9	Adjust A9 so 21.25MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

4.5 MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.01MFD	High side to pin 2 (grid) of 12AU7 (V7). Low side to chassis.	Not used	4.5MC (400∿ Mod.)	Any	Vert. amp. to pin 2 (grid) of picture tube. Low side to chassis.	A10	Adjust for MINIMUM 400∿ indication on scope.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.

Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency a similar amount for a majority of the channels, it may be possible to correct them in one step using A-11. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A-11 will not bring all channels within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.

The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	215.75MC (Unmod.)	13	DC probe to Point (C). Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
			209.75MC	12		A13	
			203.75MC	11		A14	
			197.75MC	10		A15	
			191.75MC	9		A16	
			185.75MC	8		A17	
			179.75MC	7		A18	
			87.75MC	6		A19	
			81.75MC	5		A20	
			71.75MC	4		A21	
			65.75MC	3		A22	
			59.75MC	2		A23	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25 MC 209.75MC	12	Vert. amp. thru 10KΩ to point ◇. Low side to chassis.	A24, A25, A26	Adjust for response curve similar to figure 4 with markers above 90%.
12.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check for response curve similar to figure 4. If markers fall below 70% on any channel make slight adjustment to A24, A25, and A26 with channel selector set for that channel. Re-check all channels to see that they have not been seriously affected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

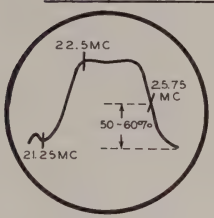


FIG. 1

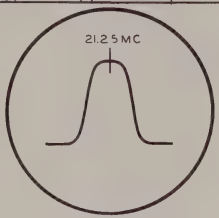


FIG. 2

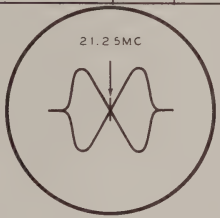


FIG. 3

FIG. 4

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.2VDC	0V	6.3VAC	0V	100VDC	100VDC	0V		
V 2	6J6	95VDC	75VDC	6.3VAC	0V	-2.2VDC	§-5.2VDC	0V		
V 3	6BC5	-.1VDC	.5VDC	6.3VAC	0V	120VDC	120VDC	.5VDC		
V 4	6BC5	-.1VDC	.5VDC	6.3VAC	0V	115VDC	115VDC	.5VDC		
V 5	6BC5	0V	1.3VDC	0V	6.3VAC	112VDC	112VDC	1.3VDC		
V 6	6AL5	0V	-.8VDC	6.3VAC	0V	0V	0V	-.2VDC		
V 7	12AU7	275VDC	-.2VDC	14VDC	6.3VAC	6.3VAC	175VDC	1VDC	12VDC	0V
V 8	6AU6	0V	0V	6.3VAC	0V	100VDC	100VDC	1.3VDC		
V 9	6AU6	-.3VDC	0V	6.3VAC	0V	100VDC	60VDC	0V		
V 10	6AL5	-.1VDC	-.4VDC	6.3VAC	0V	0V	0V	-.4VDC		
V 11	6AV6	-.4VDC	0V	0V	6.3VAC	0V	0V	85VDC		
V 12	6V6GT	0V	#6.3VAC	#190VDC	#200VDC	#-6.2VDC	#-6.4VDC	# 0V	#0V	
V 13	6SN7GT	-.5VDC	85VDC	0V	-.9VDC	280VDC	11VDC	0V	6.3VAC	
V 14	12BH7	100VDC 25VDC	-3VDC -9VDC	0V	6.3VAC	6.3VAC	380VDC 290VDC	0V	30VDC 12VDC	0V
V 15	6SN7GT	-2.6VDC -3.2VDC	95VDC 70VDC	-15VDC -20VDC	-50VDC	180VDC	0V	6.3VAC	0V	
V 16	6BQ6GT	0V	6.3VAC	285VDC	125VDC	-6.5VDC	-5.4VDC	0V	5VDC	TOP CAP •
V 17	6W4GT	285VDC	0V	420VDC	285VDC	285VDC	0V	6.3VAC	0V	
V 18	1B3GT	• DO NOT MEASURE								
V 19	5U4G	0V	365VDC	0V	370VAC	0V	370VAC	0V	365VDC	
V 20	16RP4		#6.3VAC	170VDC	PIN 10 380VDC	PIN 270VDC	11 90VDC	PIN 12 #0V		

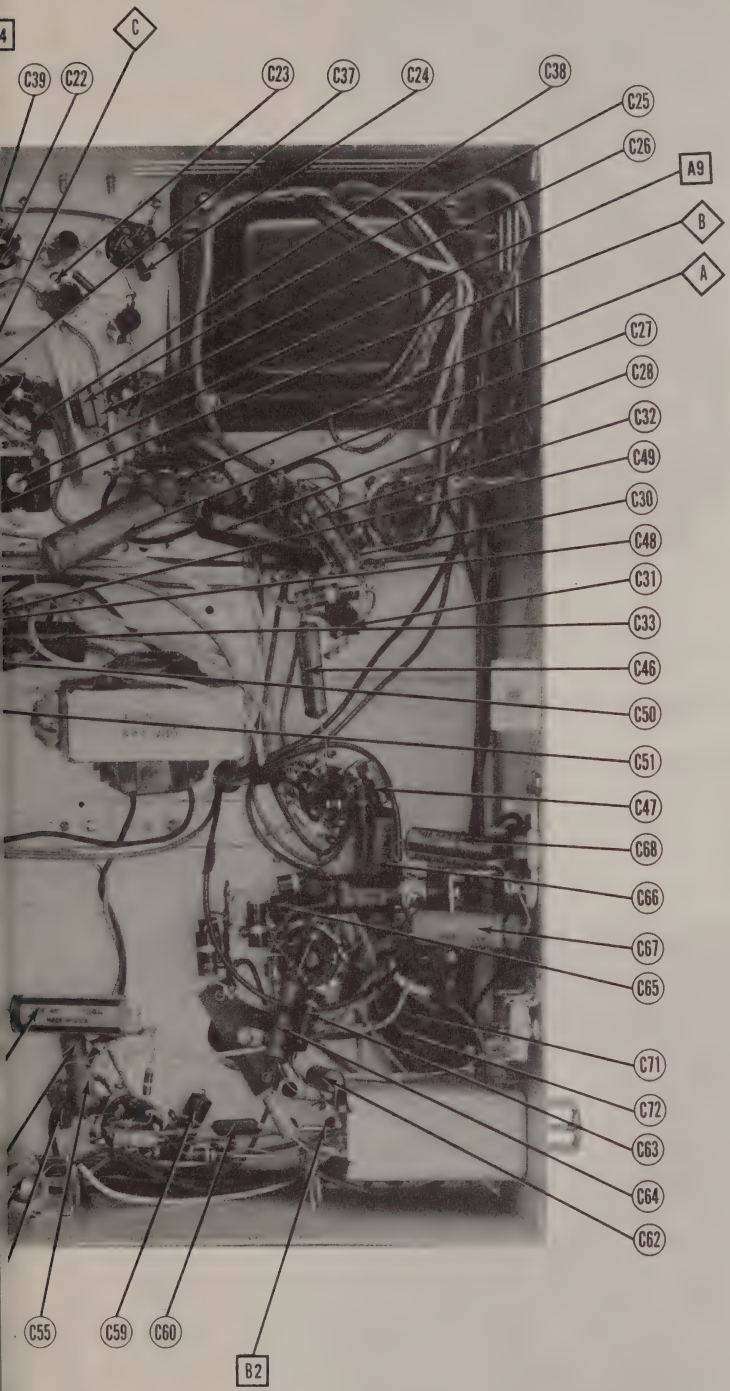
FOCUS CONTROL COUNTER CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
# MEASURED FROM PIN 8 OF V 12
• DO NOT MEASURE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	600KΩ	0Ω	.1Ω	0Ω	#2.2KΩ	#2.2KΩ	0Ω		
V 2	6J6	#4.7KΩ	#15KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6BC5	220KΩ	39Ω	.1Ω	0Ω	#150Ω	#150Ω	39Ω		
V 4	6BC5	220KΩ	39Ω	.1Ω	0Ω	#300Ω	#300Ω	39Ω		
V 5	6BC5	.3Ω	150Ω	0Ω	.1Ω	#450Ω	#450Ω	150Ω		
V 6	6AL5	.3Ω	3.9Meg	.1Ω	0Ω	0Ω	0Ω	8.2KΩ		
V 7	12AU7	†3.8KΩ	8.2KΩ	5KΩ	.1Ω	.1Ω	†5.5KΩ	1Meg	560Ω	0Ω
V 8	6AU6	.1Ω	0Ω	.1Ω	0Ω	†18KΩ	†18KΩ	150Ω		
V 9	6AU6	100KΩ	0Ω	.1Ω	0Ω	†18KΩ	†65KΩ	0Ω		
V 10	6AL5	200KΩ	100KΩ	.1Ω	0Ω	0Ω	0Ω	100KΩ		
V 11	6AV6	10Meg	0Ω	0Ω	.1Ω	0Ω	0Ω	†560KΩ		
V 12	6V6GT	Inf.	#.4Ω	†695Ω	†400Ω	200KΩ	120KΩ	#0Ω	40KΩ	
V 13	6SN7GT	1Meg	†22KΩ	0Ω	3.9Meg	†500Ω	6.8KΩ	0Ω	.1Ω	
V 14	12BH7	†1.2Meg †2.5Meg	1.3Meg 2.3Meg	0Ω	.1Ω	.1Ω	▲7.3KΩ	2.2Meg	5.5KΩ 560Ω	0Ω
V 15	6SN7GT	800KΩ	†100KΩ †120KΩ	300KΩ	250KΩ	†57KΩ	0Ω	.1Ω	0Ω	
V 16	6BQ6GT	Inf.	.1Ω	†450Ω	†17KΩ	470KΩ	470KΩ	0Ω	100Ω	TOP CAP ▲120Ω
V 17	6W4GT	†450Ω	Inf.	180KΩ	†450Ω	†450Ω	Inf.	.1Ω	0Ω	
V 18	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲490Ω
V 19	5U4G	Inf.	12KΩ	Inf.	38Ω	Inf.	38Ω	Inf.	12KΩ	
V 20	16RP4	#.4Ω	†5.5KΩ	PIN 10 ▲100KΩ	PIN 380KΩ	11 500KΩ	PIN 12 #0Ω			

FOCUS CONTROL COUNTER CLOCKWISE
MEASURED FROM PIN 8 OF V 12
† MEASURED FROM PIN 8 OF V19
▲ MEASURED FROM PIN 3 OF V 17

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



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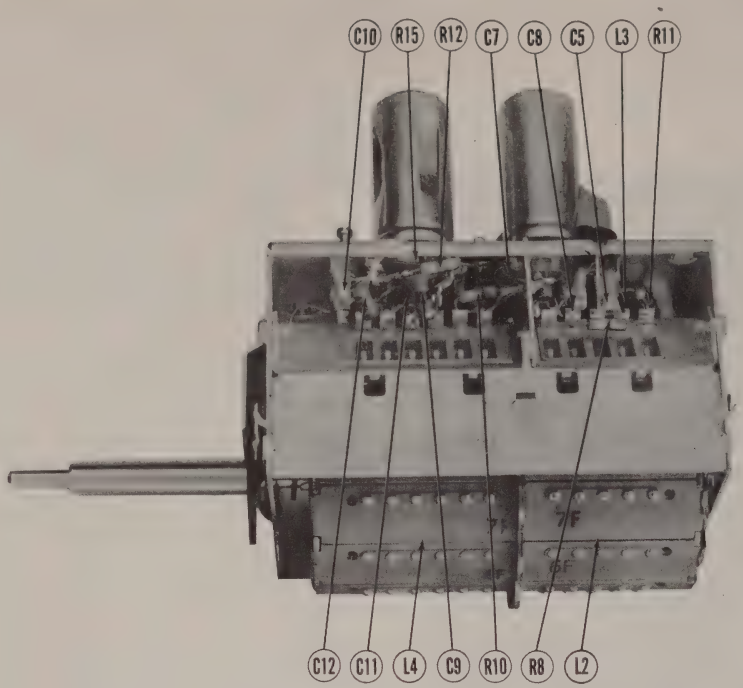
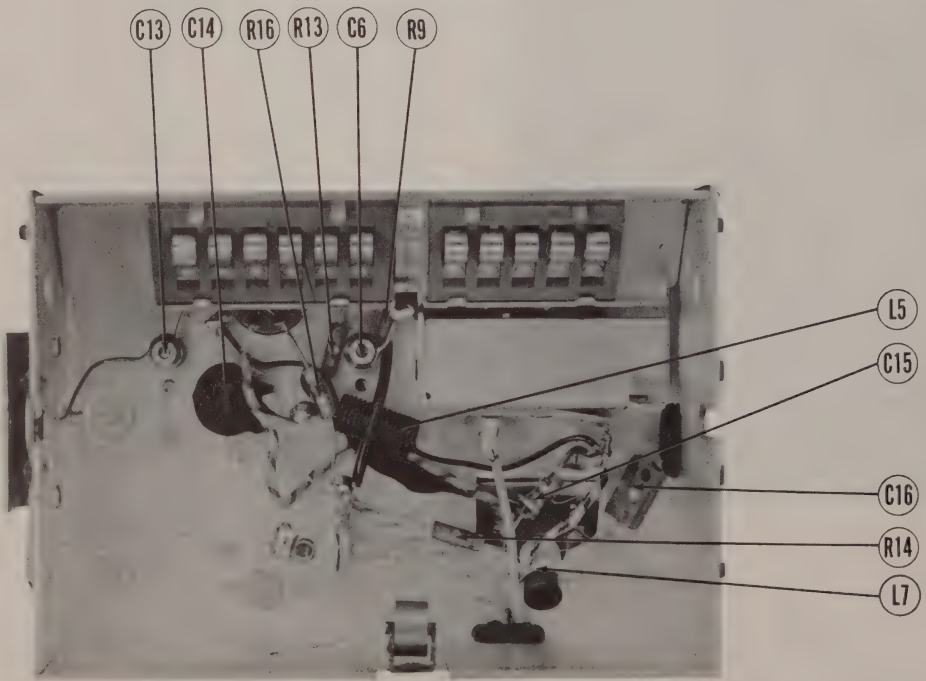
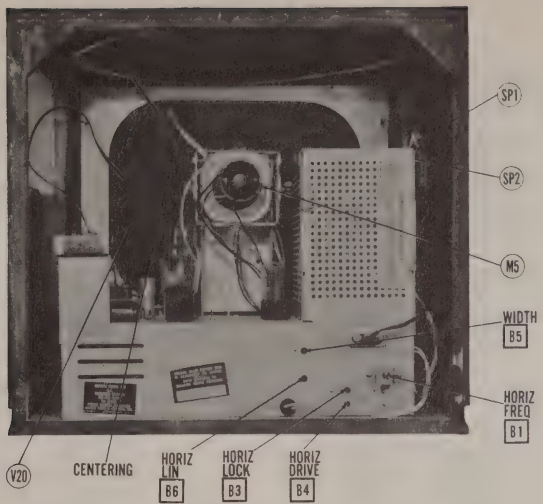


RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the locking range trimmer (B3) one turn from the full clockwise position.

Connect a short across terminals C and D of L18.

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to maximum clockwise.

Adjust the horizontal frequency slug (B1) until the picture synchronizes then counter-clockwise until the picture is out of sync and shows one horizontal blanking bar.

Remove the short from L18 and connect the vertical input lead of an oscilloscope, through a 50KΩ isolating resistor, to terminal C of L18.

Adjust the horizontal waveform slug (B2) until the broad and narrow peaks of the waveform on the scope are of equal height as shown in figure 5. If necessary adjust B1 to keep the picture synchronized, while adjusting B2.

Turn the hold control over its entire range. The picture should remain in synchronization over the entire range except at the extreme clockwise position, where the picture should be out of sync and show no more than four sloping bars.

WIDTH , DRIVE AND LINEARITY ADJUSTMENTS

Adjust the width slug (B4) until the picture fills the mask horizontally.

Adjust the horizontal drive trimmer (B5) for the best compromise between brightness and horizontal linearity.

Adjust the horizontal linearity slug (B6) for best linearity in the right half of the picture. If necessary readjust B4 for proper width.

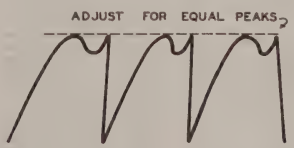


FIG. 5

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove five wood screws holding rear cover in place. Remove rear cover.
3. Disconnect built - in antenna.
4. Disconnect speaker.
5. Remove four 7/16" hex head bolts securing chassis to cabinet. Remove chassis.
6. Remove four 5/16" hex nuts holding speaker to cabinet. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6AG5	6AG5	7BD	
B	RF Amplifier	6BC5	6BC5	7BD	
V2	Converter	6J6	6J6	7BF	
V3A	1st Video IF Amp.	6BC5	6BC5	7BD	
B	1st Video IF Amp.	6AG5	6AG5	7BD	
V4A	2nd Video IF Amp.	6BC5	6BC5	7BD	
B	2nd Video IF Amp.	6AG5	6AG5	7BD	
V5A	3rd Video IF Amp.	6BC5	6BC5	7BD	
B	3rd Video IF Amp.	6AG5	6AG5	7BD	
V6	Video Det. -AGC-Sync. Limiter	6AL5	6AL5	6BT	
V7A	Video Amp.	12AU7	12AU7	9A	
B	Video Amp.	6SN7GT	6SN7GT	8BD	
V8A	Sound IF Amp.	6AU6	6AU6	7BK	
B	Sound IF Amp.	6BA6	6BA6	7BK	
V9	Limiter	6AU6	6AU6	7BK	
V10	Discr.	6AL5	6AL5	6BT	
V11	AF Amplifier	6AV6	6AV6	7BT	
V12	Audio Output	6V6GT	6V6GT	7AC	
V13	Sync. Amp. -Sync. Sep.	6SN7GT	6SN7GT	8BD	
V14A	Vert. Osc. -Vert. Amplifier	12BH7	12BH7	9A	
B	Vert. Osc. -Vert. Amplifier	6SN7GT	6SN7GT	9BD	
V15	Hor. AFC-Hor. Osc.	6SN7GT	6SN7GT	8BD	
V16	Horiz. Output	6BQ6GT	6BQ6GT	5BT	
V17	Damper	6W4GT	6W4GT	4CG	
V18	H. V. Rectifier	1B3GT	1B3GT	3C	
V19	L. V. Rectifier	5U4G	5U4G	5T	
V20A	Picture Tube	16RP4	16RP4	12D	
B	Picture Tube	16KP4	16KP4	12D	
C	Picture Tube	17BP4	17BP4	12D	
D	Picture Tube	17BP4A	17BP4A	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450		AFH88J12E		UPT4445-3335		TVL-3764	■ Filter
B	40	450							● Filter
C	60	200							▲ Decoupling
C2A	80	450		AFH162J25A				TVL-2776	● Filter
B	10	450						TVA-1311	■ Filter
C	125	25							▲ Vert. Output Cath.
C3	4	450		PRS450/4		BR445		TVA-1702	Vert. Output Dec.
C4	50	250		PRS450/40		BR5025		TVA-1511	Decoupling
C5	3-9								Variable Trimmer
C6	.5-3				829-3				Variable Trimmer
C7	120			SI120	D6-121		GP2K-120	19C29	RF Amp. Dec.
C8	1000			SI1000	D6-102		GP2L-001	19C1	RF Amp. Fil.
C9	100			SI100N750	TCN-100		N750L-100	26C16	RF Coupling
C10	.5-3				829-3				Variable Trimmer
C11	20			SI20NPO	TCZ-20		NPOK-20		Osc. Grid Cap
C12	10			SI10N750	TCN-10		N750K-10	19C4	Fixed Trimmer
C13	.5-3				829-3				Variable Trimmer
C14A	1000		BPD-2X001	DD-2-102			812-2X001	29C7	RF Bypass
B	1000								Conv. Fil. Bypass
C15	10			SI10NPO	TCZ-10		NPOK-10	19C3	Fixed Trimmer
C16	120	500		SI120	D6-121		GP2K-120	19C29	IF Coupling
C17	1500			SI1500	D6-152	1W5D15	GP2L-0015	29C8	Filament Bypass
C18	.01	600		P688-01	D6-103	PTE681	821-01	6TM-S1	RF Bypass
C19	1500			SI1500	D6-152	1W5D15	GP2L-0015	29C8	AGC Filter
C20A	1500		BPD-2X0015	DD-2-152		1W5D15	812-2X0015	29C6	AGC Filter
B	1500					1W5D15			1st V. IF Dec.
C21	330	500		SI330	D6-331	5W5T3	GP2K-330	19C14	IF Coupling
C22A	1500		BPD-2X0015	DD-152		1W5D15	812-2X0015	29C6	AGC Filter
B	1500					1W5D15			2nd V. IF Dec.
C23	75			SI75NPO	TCZ-75		NPOM-75		Fixed Trimmer
C24	1500			SI1500	D6-152	1W5D15	GP2L-0015	29C8	3rd V. IF Dec.
C25	100	500		1468-0001	D6-101	5W5T1	GP1K-100	1FM-31	3rd V. IF Cath.
C26	4	1500		1469-000005	TCZ-4.7	5R5V5	NPOK-4.7	MS-55	V. Diode Filter
C27	.1	600		P688-1	DF-104	PTE6P1		6TM-P1	AGC Filter
C28	.25	400		P488-25		GT4P25		4TM-P25	AGC Filter
C29	47	500		1468-00005	D6-470	5W5Q5	GP1K-47	1FM-45	V. Amp. Cath.
C30	330	500		1468-00035	D6-331	5W5T3	GP2K-330	1FM-335	V. Amp. Cath.
C31	47			SI47NPO	TCZ-47	5R5Q5	NPOM-47	29C14	Fixed Trimmer
C32	.05	400		P488-05	DF-503	PTE485		4TM-85	Video Coupling
C33	.22	400		P488-22		GT4P25		4TM-P22	Pic. Tube Cathode
C34	1500			SI1500	D6-152	1W5D15	GP2L-0015	29C8	1st S. IF Cath †
C35	1500			SI1500	D6-152	1W5D15	GP2L-0015	29C8	1st C. IF Dec.
C36	10	500		1468-00001	D6-100	5W5Q1	GP1K-10	MS-41	Fixed Trimmer
C37	22	500		SI22	D6-220	5W5Q25	GP1K-22	19C23	IF Coupling
C38A	1500		BPD-2X0015	DD-2-152		1W5D15	812-2X0015	29C6	Limiter Screen
B	1500					1W5D15			Limiter Plate Dec.
C39	330	500		1468-00035	D6-331	5W5T3	GP2K-330	19C14	RF Bypass
C40	.0022	600		P688-0022	D6-222	PTE6D2	GP2M-0022	6TM-D22	Audio Coupling
C41	.01	600		P688-01	D6-103	PTE681	821-01	6TM-S1	Audio Coupling *
C42	.002	600		P688-002	D6-202	PTE6D2	GP2M-002	6TM-D2	De-emphasis *
C43	.01	600		P688-01	D6-103	PTE681	821-01	6TM-S1	Audio Coupling
C44	.05	400		P488-05	DF-503	PTE485		4TM-S5	Bias Filter
C45	.01	600		P688-01	D6-103	PTE681	821-01	6TM-S1	Output Plate
C46	.05	400		P488-05	DF-503	PTE485		4TM-S5	Sync. Coupling
C47	220	500		SI220	D6-221	5W5T2	GP2K-220	19C13	Sync. Coupling
C48	330	500		1468-00035	D6-331	5R5T3	GP2K-330	19C14	Sync. Sep. Cath.
C49	.0022	600		P688-0022	D6-222	PTE6D2	GP2M-0022	6TM-D22	Integrator Net #
C50	.005	600		P688-005	D6-502	PTE6D5	811-005	6TM-D5	Integrator Net #
C51	.0047	600		P688-0047	D6-472	PTE6D5	GP2M-0047	6TM-D47	Integrator Net #
C52	.0047	600		P688-0047	D6-472	PTE6D5	GP2M-0047	6TM-D47	Vert. Osc. Grid

CAPAC

ITEM No.	RATING: CAP.	RATING: VOLT	REPLA: OLYMPIC PART No.	REPLA: AEROVOX PART No.	CEN PA
C53	.047	600		P688-047	
C54	.25	400		P488-25	
C55	220	500		1469-00025	D6-
C56	150	500		1468-00015	D6-
C57	.0022	600		P688-0022	D6-
C58	.25	400		P488-25	
C59	.022	400		P488-022	DF-
C60	180	1000			
C61	.047	400		P488-047	DF-
C62	.01	600		P688-01	
C63	.0022	600		P688-0022	D6-
C64	.0047	600		P688-0047	D6-
C65	.047	400		P488-047	DF-
C66	.25	400		P488-25	
C67	.035	600		P688-033	
C68	.05	600		P688-05	
C69	.05	600		P688-05	DF-
C70	500	20000		HV20C	TV
C71	.01	600		P688-01	D6-
C72	.01	600		P688-01	D6-
C73	.05	400		P488-05	DF-
C74	.05	600		P688-05	DF-

* Not Used In All Models.
† Used Only When 6BA6 Is Used In V 8 Position.
‡ Used Only On Models 752U, 753U, 755U, 764U.
# On Some Models, Items C49, C50, C51, R58, R59 A

C

ITEM No.	RATING: RESIST-ANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: IRC PART No.	CI P
				Concentrikit	
R1A	5000Ω	½		B17-114 *	
B	1Meg	½	PT2267	B13-137 #	R
C	Shaft End			E-187 *	
D	Switch			76-1 *	
R2A	50KΩ	½	PT2268	Q11-123	A
B	Shaft		Not req.	Not req.	R
R3A	1Meg	½	PT2269	Q11-137	A
B	Shaft		Not req.	Not req.	R
R4A	380KΩ	½	PT2270	Q11-133	A
B	Shaft		Not req.	Not req.	F
R5	2250Ω	4	PT2273		R
R6A	2.5Meg	½	PT2272	Q11-239	A
B	Shaft		Not req.	RQ	F
R7A	5000Ω	½	PT2271	Q11-114	A
B	Shaft		Not req.	RQ	F

* Additional Parts To Be Used In "Concentrikit".
Note 1. Some Models May Use A 500KΩ Control In This

R

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: IRC PART N
R8	3900Ω 20%	½		BTS-3900
R9	2200Ω 20%	½		BTS-2200
R10	10KΩ	½		
R11	47KΩ 20%	½		
R12	4700Ω 20%	½		BTS-4700
R13	220KΩ 20%	½		
R14	15KΩ 20%	½		
R15	10KΩ	½		
R16	4700Ω	½		BTS-4700
R17	1000Ω 20%	½		BTS-1000
R18	8200Ω 20%	½		
R19	39Ω	½		
R20	150Ω 20%	½		BTS-150
R21	150Ω	½		BTS-150
R22	5600Ω	½		
R23	39Ω	½		
R24	6800Ω 20%	½		
R25	150Ω 20%	½		BTS-150
R26	150Ω 20%	½		BTS-150
R27	4700Ω	½		BTS-4700
R28	8200Ω	½		BTS-8200
R29	560KΩ	½		BTS-560K
R30	470KΩ 20%	½		BTS-470K
R31	330KΩ 20%	½		BTS-330K
R32	3300Ω	2		BTS-3300
R33	1Meg 20%	½		BTS-1Meg
R34	560Ω	½		BTS-560
R35	3300Ω	2		BTS-3300
R36	680Ω	1		BTA-680
R37	1000Ω 20%	½		BTS-1000
R38	180KΩ	½		BTS-180K
R39	330KΩ 20%	½		BTS-330K
R40	150Ω	½		BTS-150
R41	1000Ω	½		BTS-1000
R42	100KΩ	½		BTS-100K
R43	47KΩ	½		BTS-47K
R44	1000Ω	½		BTS-1000
R45	100KΩ	½		BTS-100K
R46	100KΩ	½		BTS-100K
R47	10Meg	½		BTS-10M
R48	560KΩ	½		BTS-560K
R49	330KΩ	½		BTS-330K
R50	82KΩ	½		BTS-82K
R51	180KΩ	½		BTS-180K
R52	680Ω	1		BTA-680
R53	680Ω	1		BTA-680
R54	1Meg 20%	½		BTS-1Meg

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6AG5	6AG5	7BD	
B	RF Amplifier	6BC5	6BC5	7BD	
V2	Converter	626	626	7BF	
V3A	1st Video IF Amp.	6BC5	6BC5	7BD	
B	1st Video IF Amp.	6AG5	6AG5	7BD	
V4A	2nd Video IF Amp.	6BC5	6BC5	7BD	
B	2nd Video IF Amp.	6AG5	6AG5	7BD	
V5A	3rd Video IF Amp.	6BC5	6BC5	7BD	
B	3rd Video IF Amp.	6AG5	6AG5	7BD	
V6	Video Det.-AGC-Sync. Limiter	6AL5	6AL5	6BT	
V7A	Video Amp.	12AU7	12AU7	9A	
B	Video Amp.	6SN7GT	6SN7GT	8BD	
V8A	Sound IF Amp.	6AU6	6AU6	7BK	
B	Sound IF Amp.	6BA6	6BA6	7BK	
V9	Limiter	6AU6	6AU6	7BK	
V10	Discr.	6AL5	6AL5	6BT	
V11	AF Amplifier	6AV6	6AV6	5T	
V12	Audio Output	6V6GT	6V6GT	7AC	
V13	Sync. Amp.-Sync. Sep.	6SN7GT	6SN7GT	8BD	
V14A	Vert. Osc.-Vert. Amplifier	12BH7	12BH7	9A	
B	Vert. Osc.-Vert. Amplifier	6SN7GT	6SN7GT	9BD	
V15	Hor. AFC-Hor. Osc.	6SN7GT	6SN7GT	8BD	
V16	Horiz. Output	6BQ6GT	6BQ6GT	5BT	
V17	Damper	6W4GT	6W4GT	4CG	
V18	H. V. Rectifier	1B3GT	1B3GT	3C	
V19	L. V. Rectifier	5U4G	5U4G	5T	
V20A	Picture Tube	16RP4	16RP4	12D	
B	Picture Tube	16KP4	16KP4	12D	
C	Picture Tube	17BP4	17BP4	12D	
D	Picture Tube	17BP4A	17BP4A	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	.40	450		AFIB83J3E		UPT4445-3335		TVL-3764	■ Filter
B	.40	450							▲ Filter
C	.60	200							◆ Decoupling
C2A	.80	450		AFIB83J25A				TVL-2776	● Filter
B	.10	450						TVA-1311	■ Filter
C	125	25							▲ Vert. Output Cath.
C3	.4	450		PRS450/4		BR445		TVA-1702	Vert. Output Dec.
C4	50	250		PRS450/40		BR5025		TVA-1511	Decoupling
C5	3-9				829-3				Variable Trimmer
C6	.5-3			SI120	D6-121		GP2K-120	19CS9	Variable Trimmer
C7	120			SI1000	D6-102		GP2L-001	19C1	RF Amp. Fil.
C8	1000			SI100N750	TCN-100		N750L-100	28C16	RF Coupling
C9	100				829-3				Variable Trimmer
C10	.5-3			SI20NPO	TCZ-20		NPOK-20		Osc. Grid Cap
C11	20			SI0N750	TCN-10		N75OK-10	19C4	Fixed Trimmer
C12	10				829-3				Variable Trimmer
C13	.5-3								Fixed Trimmer
C14A	1000			BPD-2X001	DD-2-102		812-2X001	29C7	RF Bypass
B	1000								Conv. Fil. Bypass
C16	10			SI10NPO	TCZ-10		NPOK-10	19C3	Fixed Trimmer
C17	120			SI120	D6-121		GP2K-120	19C29	IF Coupling
C18	1500			SI500	D6-152	IWSK8	GP2L-0015	29C8	Filament Bypass
C18	.01	600		1468-01	D6-103	PTE8S1	821-01	6TM-S1	RF Bypass
C19	1500			SI1500	D6-152	1W5D15	GP2L-0015	29C8	AGC Filter
C20A	1500			BPD-2X0015	DD-2-152	1W5D15	812-2X0015	29C6	AGC Filter
B	1500					1W5D15			1st V. IF Dec.
C21	330	500		SI330	D6-331	5W5T3	GP2K-330	19C14	IF Coupling
C22A	1500			BPD-2X0015	DD-152	1W5D15	812-2X0015	29C6	AGC Filter
B	1500					1W5D15			2nd V. IF Dec.
C23	.75			SI75NPO	TCZ-75		NPOM-75		Fixed Trimmer
C24	1500			SI1500	D6-152	1W5D15	GP2L-0015	29C8	3rd V. IF Dec.
C25	100	500		1468-0001	D6-101	5W5T1	GP1K-100	1FM-31	3rd V. IF Cath.
C26	4	1500		1469-000005	TCZ-4.7	5R5Y5	NPOK-4.7	MS-55	V. Diode Filter
C27	.1	600		P688-1	DF-104	PTE8P1		6TM-P1	AGC Filter
C28	25	500		P688-25		GT4P25		4TM-P25	AGC Filter
C29	47	500		1468-00005	D6-470	5W5Q5	GP1K-47	1FM-45	V. Amp. Cath.
C30	330	500		1468-00035	D6-331	5W5T3	GP2K-330	1FM-335	V. Amp. Cath.
C31	47			2647NPO	TCZ-47	5R5Q6	NPOM-47	29C14	Fixed Trimmer
C32	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C33	.22	400		P488-22		GT4P225		4TM-P22	Pic. Tube Cathode
C34	1500			SI1500	D6-152	1W5D15	GP2L-0015	29C8	1st S. IF Cath †
C35	1500			SI1500	D6-152	1W5D15	GP2L-0015	29C8	1st C. IF Dec.
C36	10	500		1468-00001	D6-100	5W5Q5	GP1K-10	MS-41	Fixed Trimmer
C37	22	500		SI22	D6-220	5W5Q25	GP1K-22	19C23	IF Coupling
C38A	1500			BPD-3X0015	DD-2-152	1W5D15	812-2X0015	29C6	Limiter Screen
B	1500					1W5D15			Pic. Tube Cathode
C39	330	500		1468-00035	D6-331	5W5T3	GP2K-330	19C14	RF Bypass
C40	.0022	600		P688-0022	D6-222	PTE8D2	GP2M-0022	6TM-D22	Audio Coupling
C41	.01	600		P688-01	D6-103	PTE8S1	821-01	6TM-S1	Audio Coupling
C42	.002	600		P688-002	D6-202	PTE8D2	GP2M-002	6TM-D2	De-emphasis *
C43	.01	600		P688-01	D6-103	PTE8S1	821-01	6TM-S1	Audio Coupling
C44	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Bias Filter
C45	.01	600		P688-01	D6-103	PTE8S1	821-01	6TM-S1	Output Plate
C46	.05	400		P688-05	DF-503	PTE4S5		4TM-S5	Sync. Coupling
C47	220	500		SI220	D6-221	5W5T2	GP2K-220	19C13	Sync. Coupling
C48	330	500		1468-00035	D6-331	5R5T3	GP2K-330	19C14	Sync. Sep. Cath.
C49	.0022	600		P688-0022	D6-222	PTE8D2	GP2M-0022	6TM-D22	Integrator Net #
C50	.005	600		P688-005	D6-502	PTE8D5	811-005	6TM-D5	Integrator Net #
C51	.0047	600		P688-0047	D6-472	PTE8D5	GP2M-0047	6TM-D47	Integrator Net #
C52	.0047	600		P688-0047	D6-472	PTE8D5	GP2M-0047	6TM-D47	Vert. Osc. Grid

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C53	.047	600		P688-047		PTE8S5		6TM-S47	Vert. Discharge
C54	.25	400		P488-25		GT4P25		4TM-P25	Vert. Sweep Coupling
C55	220	500		1469-00025	D6-221	5R5T2	GP2K-220	19C13	Hor. Sync. Coupling
C56	150	500		1468-00015	D6-151	5W5T15	GP1K-150	1FM-315	Voltage Divider
C57	.0022	600		P688-0022	D6-222	PTE8D2	GP2M-0022	6TM-D22	Hor. Sync. Coupling
C58	.25	400		P488-25		GT4P25		4TM-P25	AFC Filter
C59	.022	400		P488-022	DF-203	PTE4S2		4TM-S22	AFC Filter
C60	180	1000							Hor. Osc. Grid
C61	.047	400		P488-047	DF-503	PTE4S5		4TM-S47	Hor. AFC Plate
C62	.01	600		P688-01		PTE8S1		6TM-S1	Fixed Trimmer
C63	.0022	600		P688-0022	D6-222	PTE8D2	GP2M-0022	6TM-D22	Hor. Discharge
C64	.0047	600		P688-0047	D6-472	PTE8D5	GP2M-0047	6TM-D47	Hor. Sweep Coupling
C65	.047	400		P488-047	DF-503	PTE4S5		4TM-S47	Hor. Output Screen
C66	.25	400		P488-25		GT4P25		4TM-P25	Hor. Output Cath.
C67	.035	600		P688-033					Damper Filter
C68	.05	600		P688-05		PTE8S5		6TM-S5	Damper Filter
C69	.05	600		P688-05	DF-503	PTE8S5		6TM-S5	Fixed Trimmer
C70	500	20000		HV20C	TV2-503				H. V. Filter
C71	.01	600		P688-01	D6-103	PTE8S1	821-01	6TM-S1	Line Filter
C72	.01	600		P688-01	D6-103	PTE8S1	821-01	6TM-S1	Line Filter
C73	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Voltage Coupling †
C74	.05	600		P688-05	DF-503	PTE8S5		6TM-S5	Vert. Sweep Coupling †

* Not Used In All Models.
† Used Only When 6BA8 Is Used In V 8 Position.
‡ Used Only On Models 752U, 753U, 755U, 764U.
# On Some Models, Items C49, C50, C51, R58, R59 And R60 Are Combined Into One Unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
				Concentrikit			
R1A	5000Ω	½	PT2367	B17-114 *	RTV-100	SBB-856-8	Contrast Control - Front
B	1Meg	½		B13-137 #			Volume Control - Rear
C	Shaft End			E-187 *			Attach Per Instructions In "Concentrikit"
D	Switch			76-1 *			Attach Per Instructions In "Concentrikit"
R2A	50KΩ	½	PT2368	Q11-123	AG-44-8	AN-31	Horizontal Hold Control
B	Shaft		Not req.	Not req.	R8-2	AK-4	Attach To R2A Per Instructions
R3A	1Meg	½	PT2269	Q11-137	AG-61-8	AN-69	Vertical Hold Control
B	Shaft		Not req.	Not req.	R8-2	AK-4	Attach To R3A Per Instructions
R4A	380KΩ	½	PT2270	Q11-133	AG-58-8	AN-59	Brightness Control - See Note 1
B	Shaft		Not req.	Not req.	F8-3	AK-4	Attach To R4A Per Instructions
R5	2250Ω	4	PT2273		RTV-9		Focus Control - Wire Wound
R6A	2.5Meg	½	PT2272	Q11-339	AG-64-8	AN-83	Height Control
B	Shaft		Not req.	BQ	FK8-1/4	AK-4	Attach To R6A Per Instructions
R7A	5000Ω	½	PT2271	Q11-114	AM-18-8	AN-10	Vertical Linearity Control
B	Shaft		Not req.	BQ	FK8-1/4	AK-4	Attach To R7A Per Instructions

* Additional Parts To Be Used In "Concentrikit".
Note 1. Some Models May Use A 500KΩ Control In This Application.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R8	3900Ω 20%	1		BTS-3900	Antenna Coil Shunt
R9	2200Ω 20%	1		BTS-2200	RF Amp. Decoupling
R10	10KΩ	1			RF Coil Shunt
R11	47KΩ 20%	1			AGC Network
R12	4700Ω 20%	1		BTS-4700	Mixer Grid
R13	220KΩ 20%	½			Mixer Grid
R14	15KΩ 20%	1			Mixer Plate
R15	10KΩ	1			Osc. Grid
R16	4700Ω	1		BTS-4700	Osc. Plate
R17	1000Ω 20%	1		BTS-1000	AGC Network
R18	82000Ω 20%	1			1st Video IF Amp. Grid
R19	39Ω	1			1st Video IF Amp. Cathode
R20	150Ω 20%	1		BTS-150	Decoupling
R21	150Ω	1		BTS-150	Decoupling
R22	5600Ω	1			2nd Video IF Amp. Grid
R23	39Ω	1			2nd Video IF Amp. Cathode
R24	6800Ω 20%	1			3rd Video IF Transformer Shunt
R25	150Ω 20%	1		BTS-150	3rd Video IF Amp. Cathode
R26	150Ω 20%	1		BTS-150	3rd Video IF Amp. Decoupling
R27	4700Ω	1		BTS-4700	4th Video IF Transformer Shunt
R28	82000Ω	1		BTS-8200	Video Det. Diode Load
R29	560KΩ	1		BTS-560K	AGC Network
R30	470KΩ 20%	1		BTS-470K	AGC Network
R31	330KΩ 20%	1		BTS-330K	AGC Network
R32	3300Ω	2		BTS-3300	Video Amp. Plate
R33	1Meg 20%	½		BTS-1Meg	Video Amp. Grid
R34	560Ω	½		BTS-560	Video Amp. Cathode
R35	3300Ω	2		BTS-3300	Video Amp. Plate
R36	680Ω	1		BTA-680	Video Amp. Plate
R37	10000Ω 20%	1		BTS-1000	Video Amp. Plate
R38	180KΩ	1		BTS-180K	Voltage Divider
R39	330KΩ 20%	1		BTS-330K	Picture Tube Cathode
R40	150Ω	1		BTS-150	Sound IF Amp. Cathode
R41	1000Ω	1		BTS-1000	Sound IF Amp. Decoupling
R42	100KΩ	1		BTS-100K	Limiter Grid
R43	47KΩ	1		BTS-47K	Limiter Screen
R44	1000Ω	1		BTS-1000	Limiter Plate Decoupling
R45	100KΩ	1		BTS-100K	Disc. Diode Load
R46	100KΩ	1		BTS-100K	Disc. Diode Load
R47	10Meg	1		BTS-10Meg	AF Amp. Grid
R48	560KΩ	1		BTS-560K	AF Amp. Plate
R49	330KΩ	1		BTS-330K	Bias Network
R50	82KΩ	1		BTS-82K	Output Grid
R51	180KΩ	1		BTS-180K	Voltage Divider
R52	680Ω	1		BTA-680	Decoupling
R53	680Ω	1		BTA-680	Decoupling
R54	1Meg 20%	½		BTB-1Meg	Sync. Amp. Grid

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R55	22KΩ 20%	1		BTA-22K	Sync. Amp. Plate
R56	3.9Meg	½		BTS-3.9Meg	Sync. Sep. Grid
R57	6800Ω 20%	½		BTS-6800	Sync. Sep. Cathode
R58	10KΩ 20%	½		BTS-10K	Integrator - See Note 2
R59	8200Ω	½		BTS-8200	Integrator - See Note 2
R60	8200Ω	½		BTS-8200	Integrator - See Note 2
R61	6.8Meg	½		BTS-6.8Meg	Voltage Divider - See Note 3
R62	330KΩ 20%	½		BTS-330K	Bias Network
R63	1Meg	½		BTS-1Meg	Vert. Osc. Grid
R64	1.5Meg 20%	½		BTS-1.5Meg	Vert. Osc. Plate
R65	2.2Meg 20%	½		BTS-2.2Meg	Vert. Amp. Grid
R66	560Ω	1		BTS-560	Vert. Amp. Cathode
R67	3300Ω	2		BTB-3300	Vert. Amp. Plate Decoupling -See Note 4
R68	3300Ω	2		BTB-3300	Vert. Amp. Plate Decoupling - See Note 4
R69	3300Ω	2		BTB-3300	Vert. Peaking
R70	100KΩ 20%	½		BTS-100K	Voltage Divider
R71	270KΩ	1		BTA-270K	Voltage Divider
R72	3.3Meg	½		BTA-3.3Meg	Voltage Divider
R73	560KΩ	½		BTS-560K	Horiz. AFC Grid
R74	150KΩ	½		BTS-150K	Horiz. AFC Cathode
R75	150KΩ	½		BTS-150K	Horiz. AFC Cathode
R76	270KΩ	1		BTA-270K	Horiz. AFC Plate
R77	8200Ω	2		BTS-8200	Horiz. AFC Filter
R78	120KΩ	1		BTS-120K	Voltage Divider
R79	100KΩ 5%	1		BTA-100K-5%	Horiz. Osc. Grid
R80	56KΩ	1		BTA-56K	Horiz. Osc. Plate - See Note 5
R81	8200Ω	2		BTB-8200	Horiz. Osc. Transformer Shunt
R82	22KΩ 20%	½		BTB-22K	Horiz. Osc. Transformer Shunt
R83	150KΩ	2		BTB-150K	Horiz. Feedback Network
R84	47Ω 20%	½			Parasitic Suppressor
R85	470KΩ 20%	½		BTB-470K	Horiz. Output Grid
R86	100Ω 20%	1		BTA-100	Horiz. Output Cathode
R87	8200Ω	2		BTB-8200	Horiz. Output Screen
R88	8200Ω	2		BTB-8200	Horiz. Output Screen
R89	1Meg 20%	½			H. V. Filter
R90	8200Ω	2		BTB-8200	Voltage Divider
R91	8200Ω	2		BTB-8200	Voltage Divider
R92	390Ω	1		BTA-390	Focus Coil Shunt
R93	33Ω	1		BW-1-33	Voltage Divider
R94A	15000Ω	3			Voltage Divider - Wire Wound
B	15KΩ	10			Bleeder - Wire Wound
R95	120KΩ			BTA-120K	Isolator - See Note 2

Note 2. In Some Sets Items R58, R59, R60, C49, C50, And C51 Are Combined Into One Unit.
Note 3. Not Used In All Models.
Note 4. Some Models Use Series Or Parallel Units In This Application To Obtain Desired Value.
Note 5. Some Models Use 22KΩ Resistor In This Application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ② 2A	780VCT .250ADC	5V ③ 3A	6.3V ③ 1A, SEC. 4 / 6.3V ④ 7A	TR-1966 (or) TR-1688	P-8159 ②	P-3067	

② Redrill mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	185Ω	100Ω	TR1473	A-8111 ①	A-3000 ①	TB0-1 ①	Vert. Block Osc.
T3	450Ω Tap 79Ω	1½Ω Tap .5 & 8Ω SEC. 3 9Ω	TR2293		HV0-6		Horiz. Output
T4	680Ω	6Ω	TR2189-A	A-8112 ①	A-3038	TS0-5	Vert. Output
T5A	12.5Ω		CL-2087	DY-7	MDF-70		Horiz. Deflection Coil
B	4Ω						Vert. Deflection Coil
T6	41.5Ω		CL-2300		MF-3		Focus Coil

① New mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T7	4.5KΩ	4.3Ω	293Ω	.5Ω	TR-1506	A-3849 ①	A-2930	R0-9 ①	① New mounting hole.

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	OLYMPIC PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	PM	3.2Ω	SK1788 ③	ST-105	5J4	③ Used in Models 752, U, and 755, U
B	PM	3.2Ω	④	MOD. P5-X		④ Used in Models 753, U, 764, U, and 767
	CONE DIA.	V. C. DIA.				
SP2A	4 3/4"	9/16"				
B	10"					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	OLYMPIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.250ADC	60Ω	2.6 Henries	CK1346	C-2325 ①	C-2991 ①	TR-3300①	① New mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	OLYMPIC PART No.	MEISSNER PART No.	
L2	Ant. Coil	0Ω				
L3	Fil. Choke	0Ω				
L4	RF, Mixer Grid and Osc. Coils	0Ω				
L5	Fil. Choke	0Ω				
L6	Fil. Choke	0Ω				12 Turns #20 Insulated Solid Wire On 1/4" Form
L7	1st Video IF	1Ω				
L8	2nd Video IF -Sound Take Off	.3Ω	.1Ω	TR-2117		
L9	3rd Video IF	.3Ω	.3Ω			
L10	Sound Trap	.1Ω	0Ω			
L11	4th Video IF	.3Ω	.3Ω			
L12	Peaking	5.5Ω			19-1921 ①	120 Microhenries (Blue Dot Wound on 22KΩ Resistor)
L13	Peaking	8Ω			19-1922	250 Microhenries (Green Dot)
L14	4.5MC Trap	2.7Ω				
L15	Peaking	5.5Ω			19-1921 ①	120 Microhenries (Blue Dot Wound on 22KΩ Resistor)
L16	Sound IF	.1Ω				
L17	Disc. Trans.	.1Ω	.1Ω	TR-1469		
L18	Horiz. Osc. Trans.	75Ω	46Ω	TR-2294		
L19	Horiz. Lin.	38Ω				
L20	Width Coil	.8Ω				Not Used In All Models

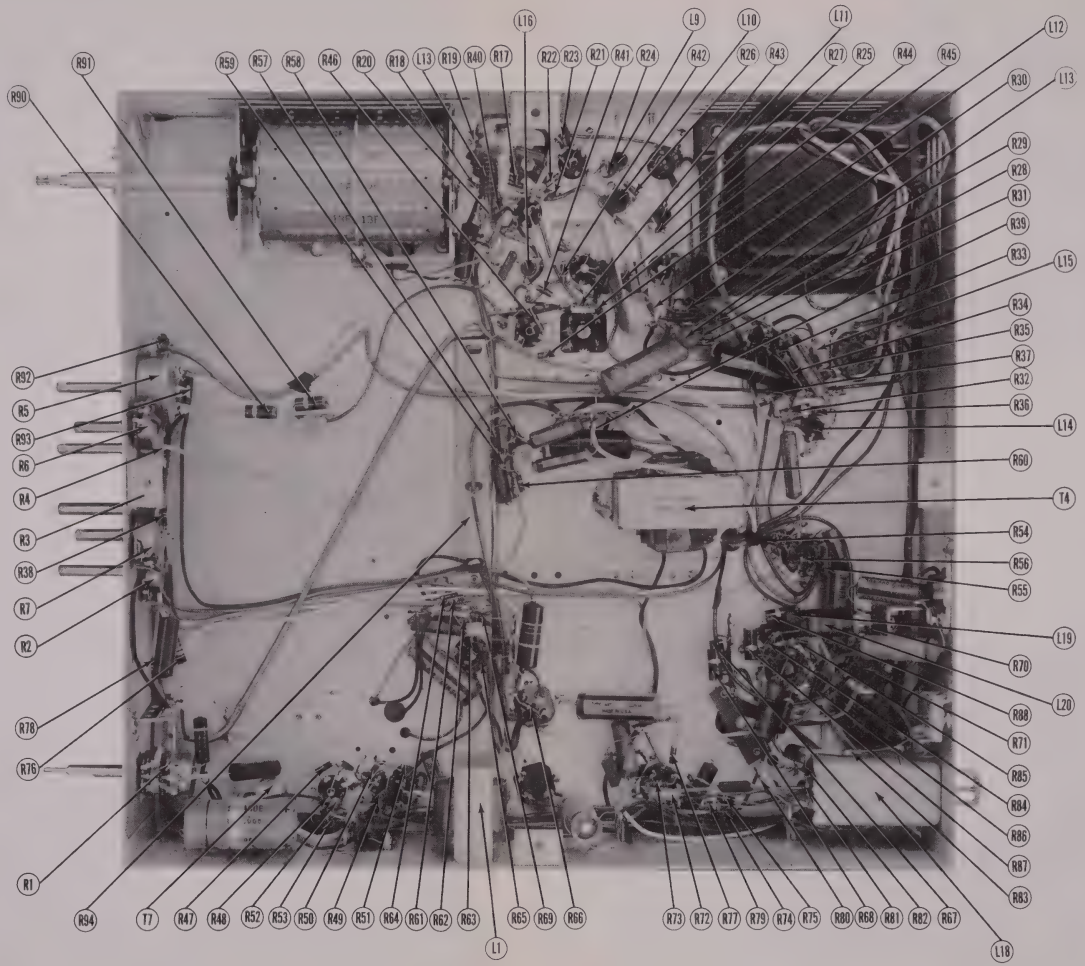
① Parallel With 22KΩ Resistor.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			OLYMPIC PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG	1/4A			312.250		

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M2	RF Tuner	CL-2262	
M3	Switch		Local-Distant (Not used on all models)
M4	Switch		TV-Phono (Not used on all models)
M5	Ion Trap		



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PHOTOFACT* Folder

PACKARD-BELL MODELS
2301-TV, 2801-TV, 2801A-TV

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MODEL 2301-TV

PACKARD-BELL MODELS
2301-TV, 2801-TV, 2801A-TV

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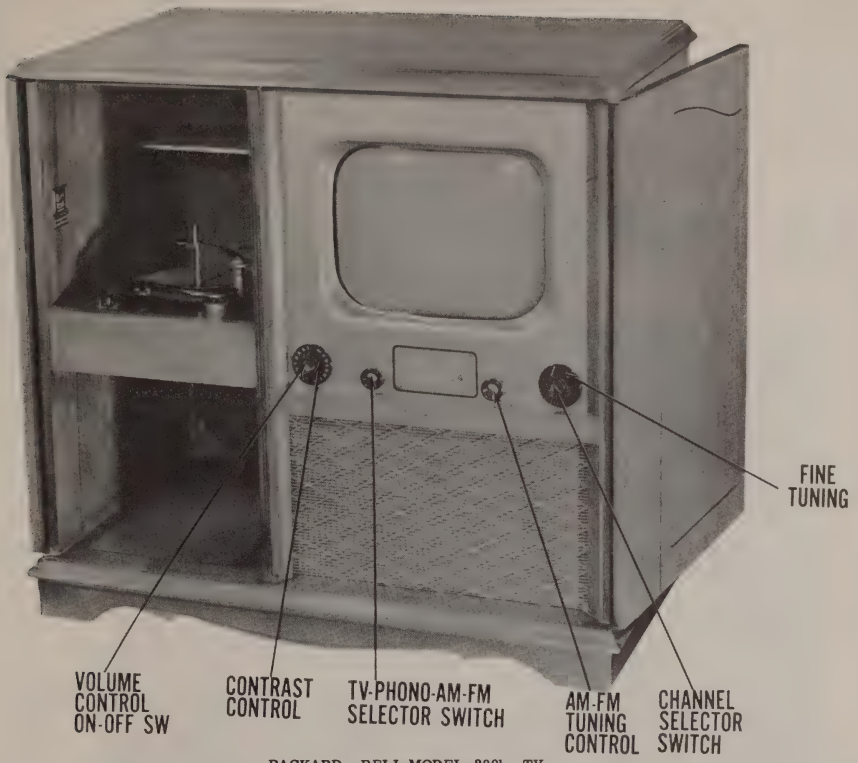

PACKARD - BELL MODEL 2801 - TV

TRADE NAME	Packard - Bell Models 2301-TV, 2801-TV, 2801A-TV
MANUFACTURER	Packard - Bell Co., 12333 W. Olympic Blvd., Los Angeles, Calif.
TYPE SET	TV-AM-FM-Phono Combination Receiver (Model 2301 "TV Only")
TUBES	Twenty Three (Model 2301) Twenty Eight (Model 2801)
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	1.7 Amp. @ 117 Volts AC (TV) .7 Amp. @ 117 Volts AC (Radio)
TUNING RANGE -	(TV) Channels 2 thru 13 (FM) 88-108MC (AM) 540-1620KC

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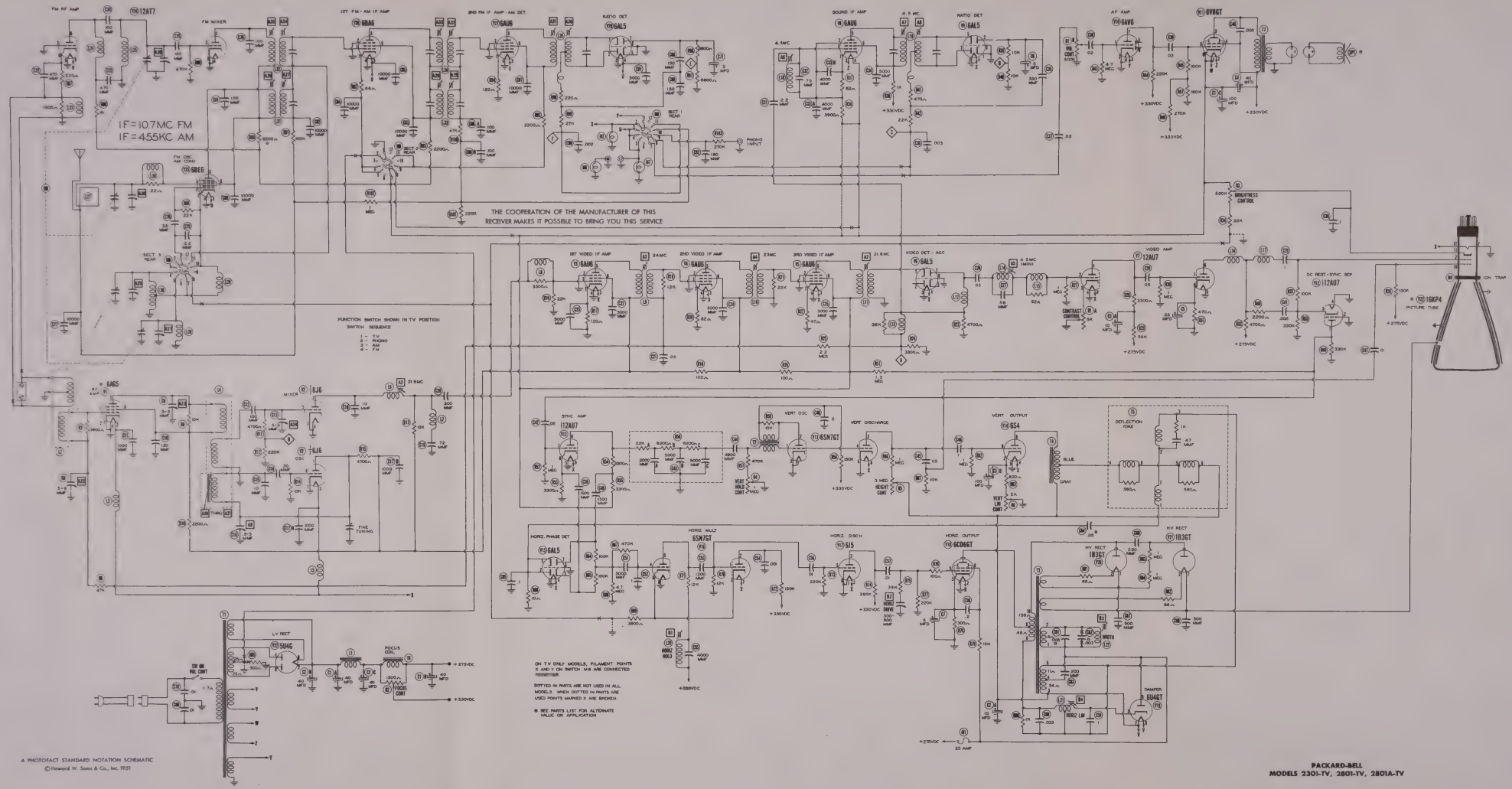
PACKARD-BELL
MODELS 2301-TV, 2801-TV, 2801A-TV


IF = 10.7MC FM
IF = 455KC AM
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
FUNCTION SWITCH SHOWN IN TV POSITION
SWITCH SEQUENCE
1 - TV
2 - PHONO
3 - AM
4 - FM
ON T-V ONLY MODELS, FILAMENT POINTS X AND Y ON SWITCH M-B ARE CONNECTED TOGETHER.
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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MODELS 2301-TV, 2801-TV, 2801A-TV

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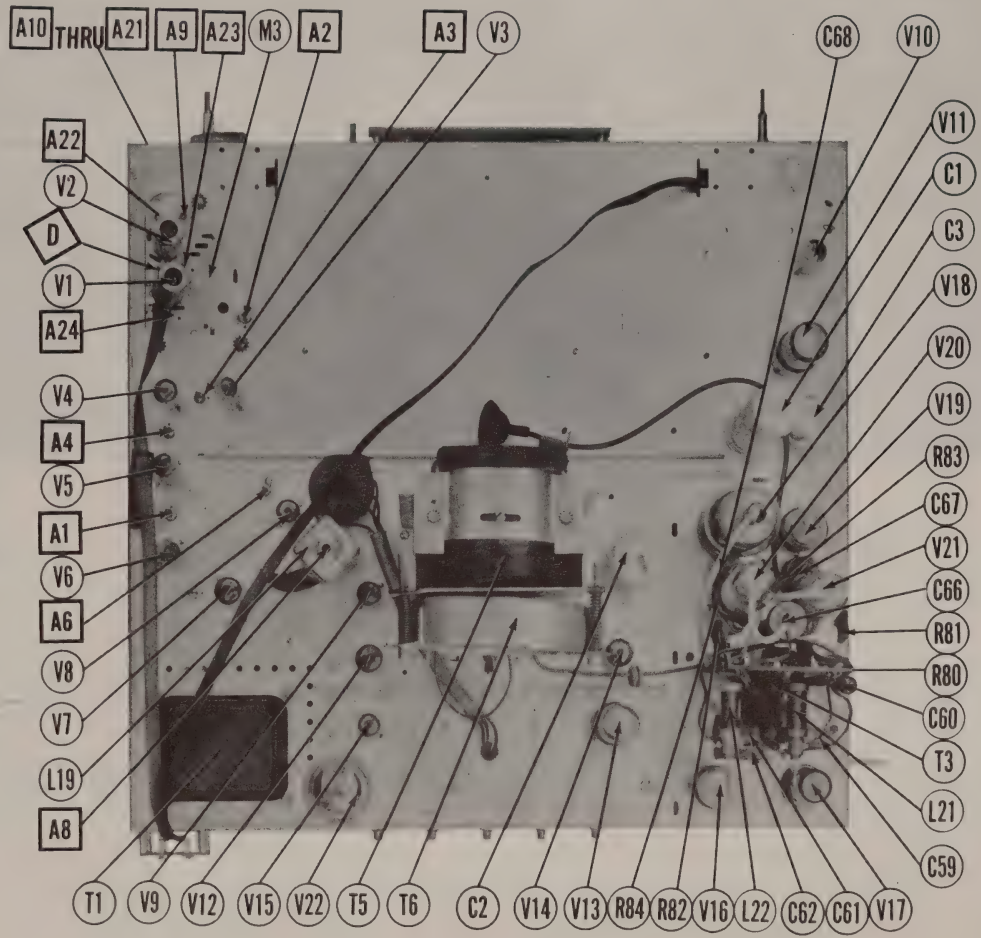
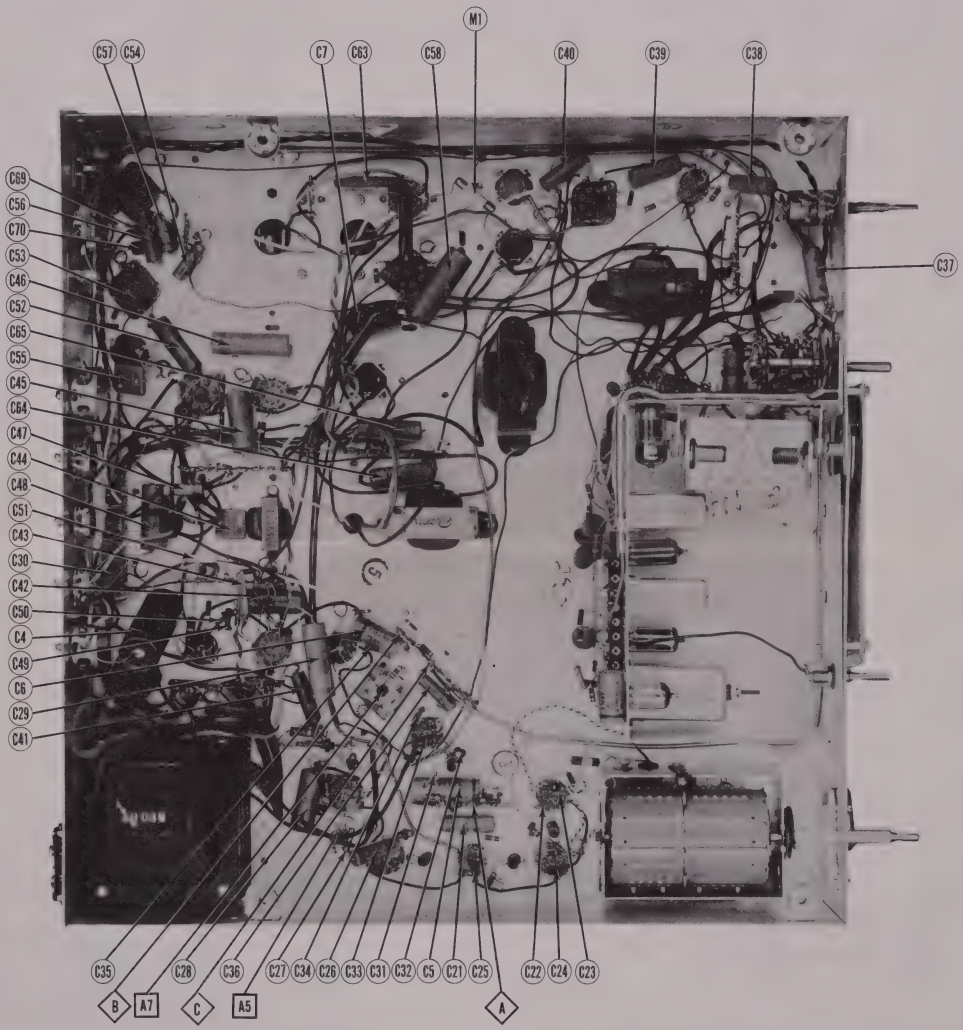
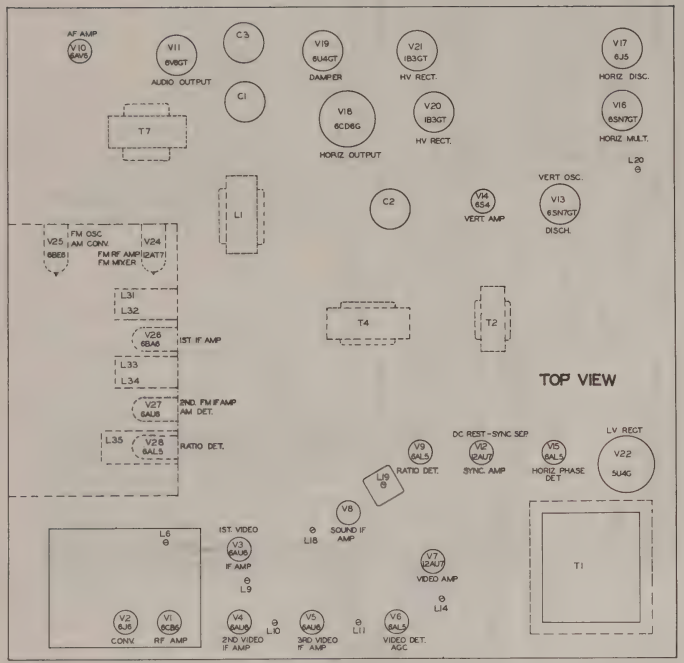


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TUBE PLACEMENT CHART

MODELS 2301-TV, 2801-TV, 2801A-TV

PACKARD-BELL

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

Turn the function selector to "TV" (maximum CCW).

VIDEO IF ALIGNMENT

Remove the converter tube and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and eliminate the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.8MC (Unmod.)	Any	DC probe to Point (A). Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	24MC	"	"	A3	"
3.	"	"	23MC	"	"	A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	23MC (10MC SWP)	20.5MC 21.8MC 25.0MC	Any	Vert. amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response. If set is to be operated in a "fringe area" retouch A1 thru A4 for response similar to figure 1A.

4.5MC TRAP ADJUSTMENT

Turn the contrast control to maximum.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.001MFD	High side to pin 1 (cathode) of 6AL5 (V6). Low side to chassis.	Not used	4.5MC (400% Mod.)	Any	Vert. amp. to pin 6 (plate) of 12AU7 (V7). Low side to chassis.	A5	Adjust for MINIMUM 400% indication on scope.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.001MFD	High side to pin 1 (cathode) of 6AL5 (V6). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (B). Common to chassis.	A6, A7	Adjust for maximum deflection.
7.	"	"	"	"	DC probe to Point (C). Common to point (B).	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	.001MFD	High side to pin 1 (cath) of 6AL5 (V6). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point (B). Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C6. Adjust for maximum amplitude and symmetry as per figure 2.
7.	"	"	"	"	"	Vert. amp. to Point (C). Low side to chassis.	A8	Reconnect capacitor C6. Adjust A8 so 4.5MC occurs ar center of crossover lines as per figure 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.

Complete oscillator alignment may not be necessary.

If the oscillator seems to be off frequency a similar amount for a majority of the channels, it may be possible to correct them in one step using A9. It should be noted that this is an all channel oscillator circuit adjustment and should bot be adjusted for any individual channel. If adjustment of A9 will not bring all channels within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp. to Point (A). Low side to chassis.	A10	Adjust to place video marker at 50% response as shown in figure 4.
			207MC (10MC SWP)	205.25MC 209.75MC	12		A 11	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A12	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A13	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A14	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A15	
			177MC (10 MC SWP)	175.25MC 179.75MC	7		A16	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A17	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A18	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A19	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A20	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A21	

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.
Turn the function selector to "TV" (maximum CCW).

VIDEO IF ALIGNMENT

Remove the converter tube and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and eliminate the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an unground-ed tube shield floating over dummy converter tube (V3). Low side to chassis.	21.8MC (Unmod.)	Any	DC probe to Point (A) Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	24MC	"	"	A3	"
3.	"	"	23MC	"	"	A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to an unground-ed tube shield floating over dummy converter tube (V2). Low side to chassis.	33MC (10MC SWP)	20.5MC 21.8MC 25.0MC	Any	Vert. amp. to Point (A) Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response. If set is to be operated in a "fringe area" retouch A1 thru A4 for response similar to figure 1A.

4.5MC TRAP ADJUSTMENT

Turn the contrast control to maximum.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.001MFD	High side to pin 1 (cathode) of 6AL5 (V6). Low side to chassis.	Not used	4.5MC (400% Mod.)	Any	Vert. amp. to pin 6 (plate) of 12AU7 (V7). Low side to chassis.	A5	Adjust for MINIMUM 400% indication on scope.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.001MFD	High side to pin 1 (cathode) of 6AL5 (V6). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (B) Common to chassis.	A6, A7	Adjust for maximum deflection.
7.	"	"	"	"	DC probe to Point (B) Common to point (A)	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	.001MFD	High side to pin 1 (cath) of 6AL5 (V6). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point (B) Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C6. Adjust for maximum amplitude and symmetry as per figure 2.
7.	"	"	"	"	"	Vert. amp. to Point (A) Low side to chassis.	A8	Reconnect capacitor C6. Adjust A8 so 4.5MC occurs ar center of crossover lines as per figure 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary.
If the oscillator seems to be off frequency a similar amount for a majority of the channels, it may be possible to correct them in one step using A9. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A9 will not bring all channels within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp. to Point (A) Low side to chassis.	A10	Adjust to place video marker at 50% response as shown in figure 4.
			207MC (10MC SWP)	205.25MC 209.75MC	12		A 11	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A12	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A13	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A14	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A15	
			177MC (10 MC SWP)	175.25MC 179.75MC	7		A16	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A17	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A18	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A19	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A20	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A21	

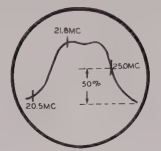


FIG. 1

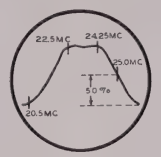


FIG.1A

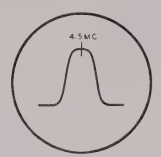


FIG. 2

FIG. 3

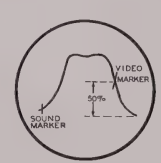


FIG.4

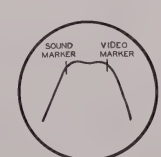


FIG.5

TV ALIGNMENT INSTRUCTIONS (CONT.)

RF ALIGNMENT

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point (A). Low side to chassis.	A22, A23, A24	Adjust for response curve similar to figure 5. with markers above 90%.
10.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check for response curve similar to figure 5. If markers fall below 70% on any channel make slight adjustment of A22, A23 and A24 with channel switch set for that channel. Re-check all channels to see that they have not been seriously affected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

RADIO ALIGNMENT INSTRUCTIONS

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
11.	.01MFD	High side to pin 7 (grid) of 6BZ8 (V25). Low side to chassis.	455KC (400% Mod.)	AM (Third position CW)	Tuning gang fully closed	Across voice coil	A25, A26, A27, A28	Adjust for maximum output.
12.	"	"	1620KC	"	Tuning gang fully open.	"	A29	"
13.	"	"	1500KC	"	Tune for max. output	"	A30	Adjust for maximum output. Set pointer to 1500KC.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
14.	.01MFD	High side to pin 1 (grid) of 6BA6 (V26). Low side to chassis.	10.7MC (Unmod.)	FM (Max. CW)	Tuning gang fully open.	DC probe to Point (B) Common to chassis.	A31, A32, A33	Adjust for maximum deflection.
15.	"	High side to pin 2 (grid) of 12AT7 (V24). Low side to chassis.	"	"	"	"	A34, A35	"
16.	"	"	"	"	"	DC probe to Point (B) Common to Point (A).	A36	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
14.	.01MFD	High side to pin 1 (grid) of 6BA6 (V26). Low side to chassis.	10.7MC (450KC SWP)	FM (Max. CW)	Point of non-interference.	Vert. amp. to Point (A) Low side to chassis.	A31, A32, A33	Disconnect stabilizer capacitor C71. Adjust for maximum amplitude and symmetry as per figure 6.
15.	"	High side to pin 2 (grid) of 12AT7 (V24). Low side to chassis.	"	"	"	"	A34, A35	"
16.	"	"	"	"	"	Vert. amp. to Point (A) Low side to chassis.	A36	Reconnect C71. Adjust A36 so 10.7MC occurs at center of crossover lines as per figure 7. SLIGHTLY retouch A33 of cross-over lines.

FM RF ALIGNMENT

The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
17.	300Ω	High side to ungrounded "FM" antenna terminal. Low side to chassis.	10.8MC (Unmod.)	FM	108MC	DC probe to Point (A) Common to chassis.	A37, A38	Adjust for maximum deflection

FIG. 6

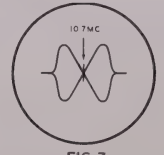


FIG. 7

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-2.4VDC	0V	6.3VAC	0V	100VDC	100VDC	0V		
V 2	6J6	80VDC	70VDC	6.3VAC	0V	-1.6VDC	§-1.7VDC	0V		
V 3	6AU6	0V	0V	6.3VAC	0V	130VDC	130VDC	1VDC		
V 4	6AU6	-.2VDC	0V	6.3VAC	0V	133VDC	133VDC	.4VDC		
V 5	6AU6	0V	0V	6.3VAC	0V	135VDC	135VDC	.6VDC		
V 6	6AL5	0V	0V	0V	6.3VAC	0V	0V	-.3VDC		
V 7	12AU7	170VDC	0V	9.4VDC	0V	0V	220VDC	0V	6.4VDC	6.3VAC
V 8	6AU6	#43VDC	#43VDC	#6.3VAC	#0V	#165VDC	#165VDC	#45VDC		
V 9	6AL5	0V	-.7VDC	0V	6.3VAC	-.3VDC	0V	-.3VDC		
V 10	6AV6	-.4VDC	0V	6.3VAC	0V	0V	0V	120VDC		
V 11	6V6GT	0V	#6.3VAC	#155VDC	#175VDC	#-5VDC	#-5.4VDC	#0V	#0V	
V 12	12AU7	20VDC	0V	2.6VDC	0V	0V	125VDC	0V	6.8VDC	6.3VAC
V 13	6SN7GT	-60VDC -85VDC	225VDC 27VDC	0V	-60VDC -85VDC	160VDC 35VDC	0V	0V	6.3VAC	
V 14	6S4	0V	15VDC	0V	6.3VAC	0V	0V	0V	0V	400VDC
V 15	6AL5	0V	0V	0V	6.3VAC	3.6VDC	0V	-3VDC		
V 16	6SN7GT	0V	130VDC	15VDC	.2VDC	290VDC	15VDC	6.3VAC	0V	
V 17	6J5	0V	6.3VAC	70VDC	0V	-17VDC	0V	0V	0V	
V 18	6CD6G	0V	6.3VAC	30VDC	-.6VDC	-.6VDC	0V	0V	150VDC	TOP CAP *
V 19	6U4GT	0V	0V	420VDC	0V	275VDC	0V	420VDC	420VDC	
V 20	1B3GT	* DO NOT MEASURE								
V 21	1B3GT	* DO NOT MEASURE								
V 22	5U4G	0V	335VDC	0V	360VAC	0V	360VAC	0V	335VDC	
V 23	16KP4	0V	1.7VDC	PIN 10 275VDC	PIN 135VDC	11 10VDC	PIN 12 6.3VAC	.		
V24	12AT7	†75VDC	†.8VDC	0V	0V	0V	†150VDC	0V	‡1.7VDC	6.3VAC
V25	6BE6	‡¶-2VDC §¶-6.4VDC	0V	6.3VAC	0V	75VDC	75VDC	‡-.4VDC ¶-.2VDC		
V26	6BA6	‡ 0V ¶-.2VDC	0V	6.3VAC	0V	‡115VDC ¶120VDC	‡115VDC ¶120VDC	1.3VDC		
V27	6AU6	‡ 0V ¶-1VDC	0V	6.3VAC	0V	‡135VDC ¶ 0V	‡135VDC ¶ 0V	‡1.2VDC ¶ 0V		
V28	6AL5	‡-.1VDC	‡-.1VDC	0V	6.3VAC	0V	0V	‡-.2VDC		

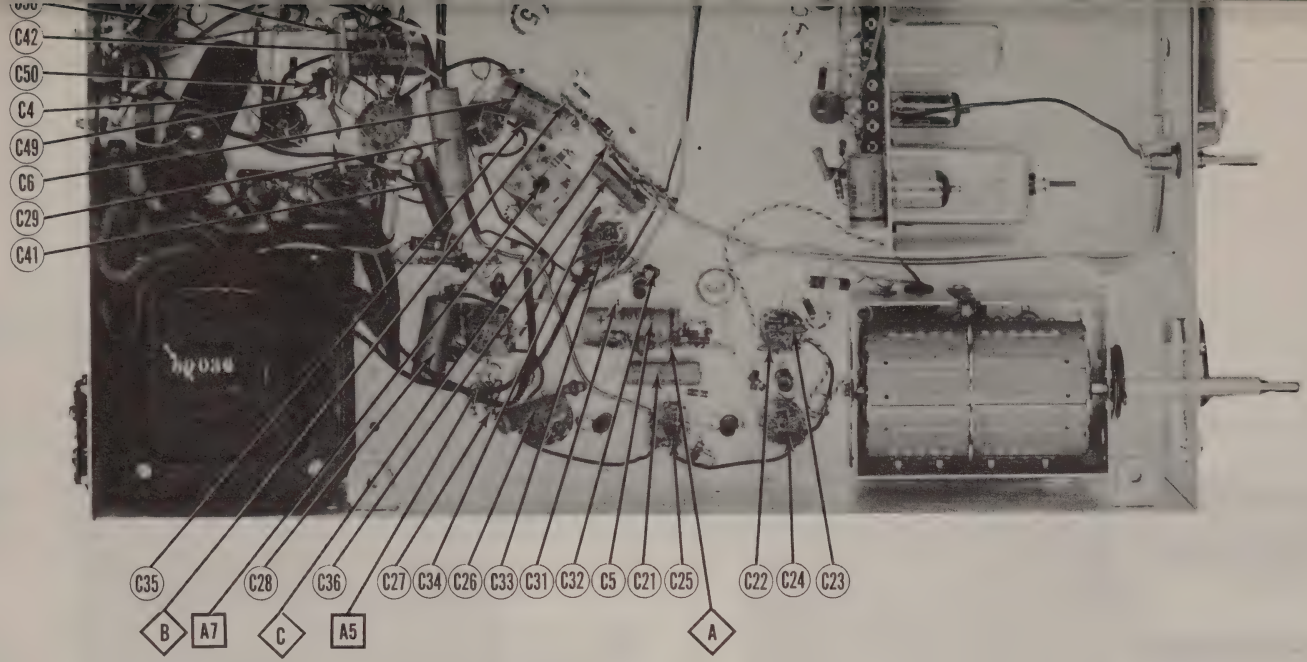
FUNCTION SWTICH IN TV POSITION FOR TUBES V 1 THRU V 23 INCLUSIVE
FUNCTION SWITCH IN AM OR FM POSITION FOR TUBES V 24 THRU V 28 INCLUSIVE
FOCUS CONTROL COUNTER CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
# MEASURED FROM PIN 8 OF V 11
‡ TAKEN IN FM POSITION
¶ TAKEN IN AM POSITION

RESISTANCE READINGS

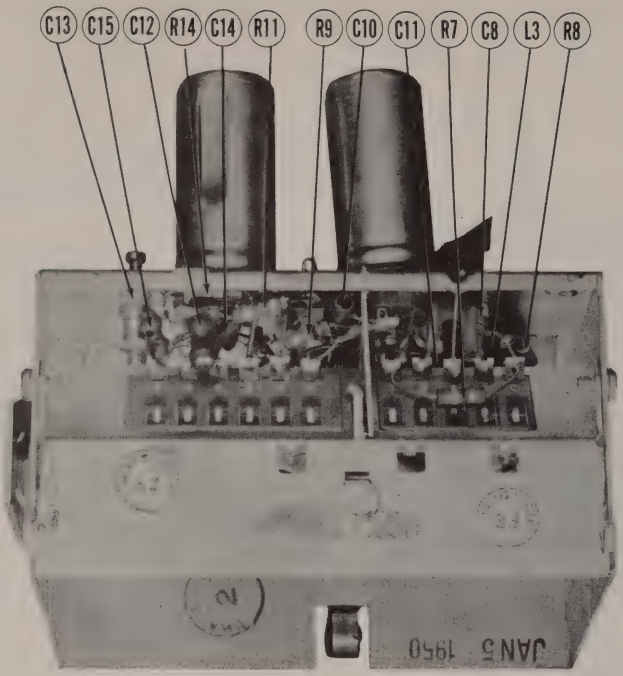
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	2.2Meg	0Ω	.1Ω	0Ω	#2.4KΩ	#2.4KΩ	0Ω		
V 2	6J6	#4.9KΩ	#15KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6AU6	22KΩ	0Ω	.1Ω	0Ω	#200Ω	#200Ω	120Ω		
V 4	6AU6	2.2Meg	0Ω	.1Ω	0Ω	#100Ω	#100Ω	82Ω		
V 5	6AU6	.3Ω	0Ω	.1Ω	0Ω	#.3Ω	#0Ω	47Ω		
V 6	6AL5	.3Ω	Inf.	0Ω	.1Ω	Inf.	0Ω	2KΩ		
V 7	12AU7	†60KΩ	1Meg	5KΩ	0Ω	0Ω	†5KΩ	1Meg	470Ω	.1Ω
V 8	6AU6	#3.9KΩ	#3.9KΩ	#.2Ω	#0Ω	†1KΩ	†1KΩ	#4KΩ		
V 9	6AL5	0Ω	20KΩ	0Ω	.1Ω	Inf.	0Ω	Inf.		
V 10	6AV6	4.7Meg	0Ω	.1Ω	0Ω	Inf.	Inf.	†220KΩ		
V 11	6V6GT	Inf.	#.2Ω	†550Ω	†45Ω	200KΩ	†140KΩ	#0Ω	100KΩ	
V 12	12AU7	330K	0Ω	330KΩ	0Ω	0Ω	#6.5KΩ	1Meg	3.3KΩ	.1Ω
V 13	6SN7GT	470KΩ 1.5Meg	†150KΩ	0Ω	470KΩ 1.5Meg	▲ 1Meg ▲ 4Meg	0Ω	0Ω	.1Ω	
V 14	6S4	Inf.	5.8KΩ 820Ω	1Meg	.1Ω	0Ω	1Meg	Inf.	Inf.	▲1.1KΩ
V 15	6AL5	10Ω	10Ω	0Ω	.1Ω	4.8Meg	0Ω	4.8Meg		
V 16	6SN7GT	12KΩ	†150KΩ	3.9KΩ	5.2 Meg	†12KΩ	3.9KΩ	.1Ω	0Ω	
V 17	6J5	0Ω	.1Ω	†390KΩ	Inf.	220KΩ	.6Ω	0Ω	0Ω	
V 18	6CD6GT	Inf.	.1Ω	300Ω	220KΩ	220KΩ	Inf.	0Ω	†10KΩ	TOP CAP ▲ 55Ω
V 19	6U4GT	Inf.	Inf.	200KΩ	Inf.	†400Ω	Inf.	▲ 70Ω	▲ 70Ω	
V 20	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲ 215Ω
V 21	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP Inf.
V 22	5U4G	Inf.	60KΩ	Inf.	25Ω	Inf.	25Ω	Inf.	60KΩ	
V 23	16KP4	0Ω	430KΩ	PIN 10 †150KΩ	PIN 160KΩ	11 30KΩ	PIN 12 .1Ω			
V24	12AT7	#6.2KΩ	470KΩ	0Ω	0Ω	0Ω	#1KΩ	0Ω	220Ω	.1Ω
V25	6BE6	22KΩ	‡ .7Ω ¶ .6Ω	.1Ω	0Ω	#6.2KΩ	#6.2KΩ	‡ 80KΩ ¶ 1.2Meg		
V26	6BA6	‡ 1.8Ω ¶ 1.3Meg	0Ω	.1Ω	0Ω	#2.2KΩ	#2.2KΩ	68Ω		
V27	6AU6	‡250KΩ ¶270KΩ	0Ω	.1Ω	0Ω	#‡2.2KΩ	#‡2.2KΩ	120Ω		
V28	6AL5	Inf.	Inf.	0Ω	.1Ω	0Ω	0Ω	14KΩ		

FUNCTION SWITCH IN AM OR FM POSITION FOR TUBES V 24 THRU V 28 INCLUSIVE
FUNCTION SWITCH IN TV POSITION FOR TUBES V 1 THRU V 23 INCLUSIVE
FOCUS CONTROL COUNTER CLOCKWISE
MEASURED FROM PIN 8 OF V 11
† MEASURED FROM PIN 2 OF V 22
▲ MEASURED FROM PIN 3 OF V 19
‡ TAKEN IN FM POSITION
¶ TAKEN IN AM POSITION

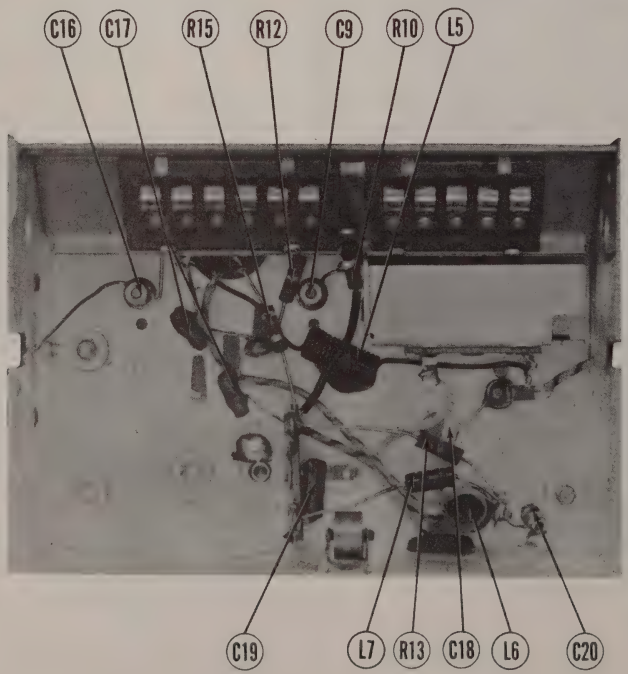
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



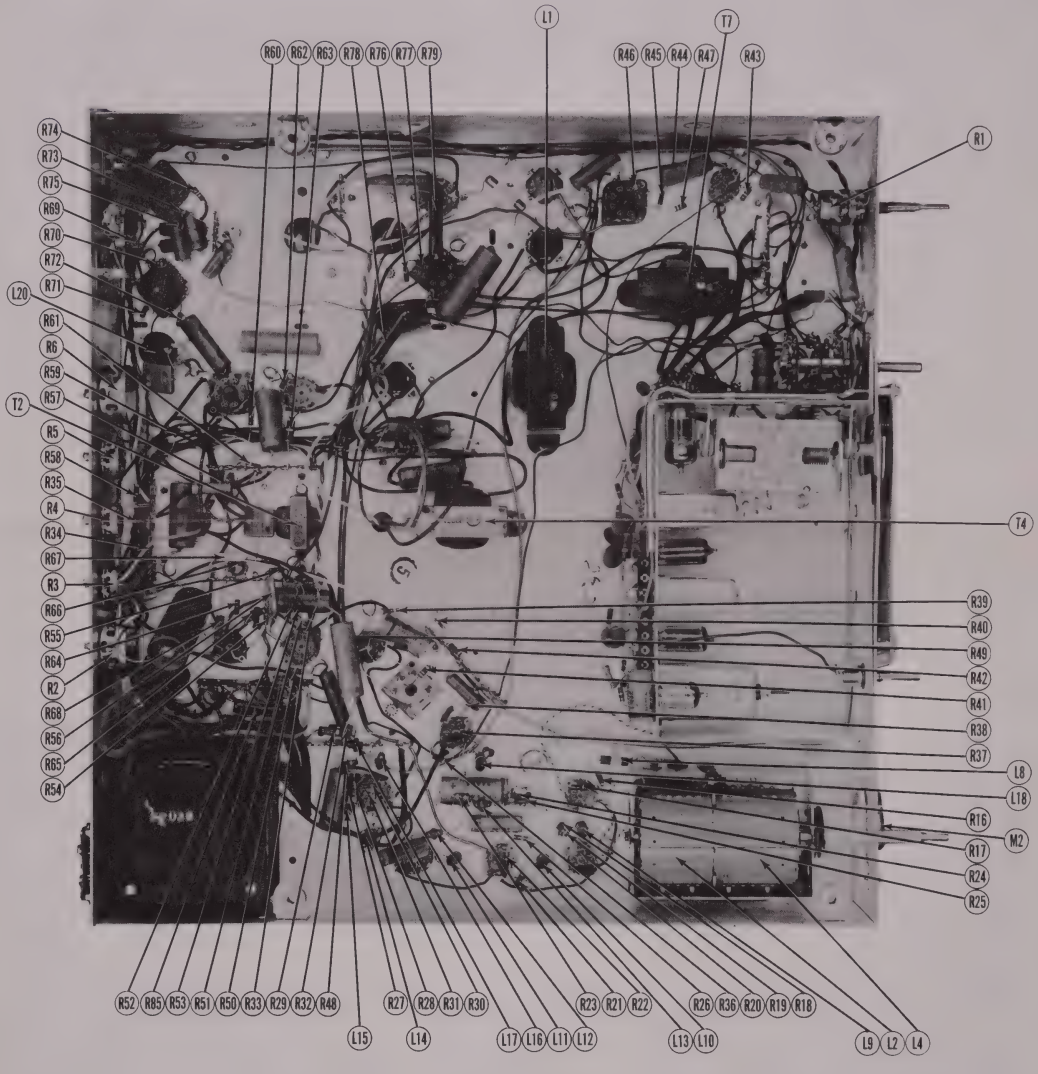
CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



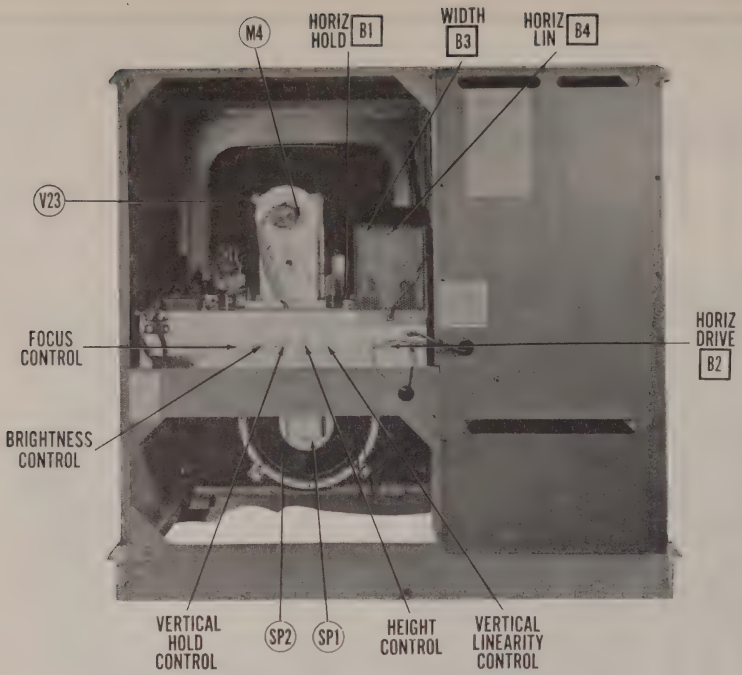
RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CABINET–REAR VIEW

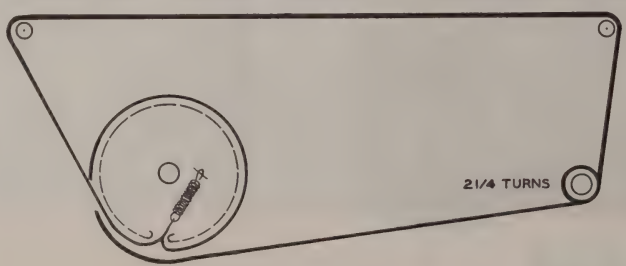
HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Adjust the horizontal hold slug (B1) until the picture synchronizes horizontally.
Switch to another channel, or to an unused channel and back again. If the picture does not immediately drop into sync, readjust B1 and repeat the check.
Alternately adjust the horizontal drive trimmer (B2) and the horizontal linearity slug (B4) until the picture is symmetrical from left to right.
Adjust the width slug (B3) until the picture fills the mask horizontally.
Repeat the drive and linearity adjustments.

DISASSEMBLY INSTRUCTIONS

1. Remove six push-on type control knobs.
2. Remove seven wood screws holding rear cover in place. Remove rear cover.
3. Remove built-in antenna from TV and FM radio.
4. Disconnect phono motor.
5. Disconnect phono audio input cable.
6. Disconnect speaker.
7. Remove four 7/16" hex head bolts securing chassis to cabinet. Remove chassis.
8. Remove eight phillips head screws from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.



DIAL CORD STRINGING

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PACKARD BELL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6CB6	6CB6	7CM	
B	RF Amplifier	6BC5	6BC5	7BD	
C	RF Amplifier	6AG5	6AG5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd Video IF Amp.	6AU6	6AU6	7BK	
V6	Video Det. -AGC	6AL5	6AL5	6BT	
V7	Video Amplifier	12AU7	12AU7	9A	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Det.	6AL5	6AL5	6BT	
V10	AF Amplifier	6AV6	6AV6	7BT	
V11	Audio Output	6V6GT	6V6GT	7AC	
V12	DC Rest. -Sync. Amp. -Sync. Sep.	12AU7	12AU7	9A	
V13	Vert. Osc. -Disch.	6SN7GT	6SN7GT	8BD	
V14	Vert. Output	6S4	6S4	9AC	
V15	Horiz. Phase Det.	6AL5	6AL5	6BT	
V16	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V17	Horiz. Disch.	6J5	6J5	6Q	
V18	Horiz. Output	6CD6G	6CD6G	5BT	
V19	Damper	6U4GT	6U4GT	4CG	
V20	H.V. Rectifier	1B3GT	1B3GT	3C	
V21	H.V. Rectifier	1B3GT	1B3GT	3C	
V22	L.V. Rectifier	5U4G	5U4G	5T	
V23A	Picture Tube	16KP4	16KP4	12D	
B	Picture Tube	19AP4	19AP4	12D	
C	Picture Tube	19AP4A	19AP4A	12D	
D	Picture Tube	16TP4	16TP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PACKARD BELL PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	24055	AF88J20E		UPT4450-1020		TVL-3764	▲ Filter ■ Filter ▲ Decoupling
B	40	450							
C	100	200							
C2A	10	500	24061	AF88J2K		UPT44145		TVL-2764	▲ Decoupling
B	40	450						TVA-1902	▲ Filter
C	40	450							▲ Filter
C3A	10	450	24062	AFH162J		UPT204		TVL-2810	▲ 1st V. Amp. Dec.
B	100	50							▲ Vert. Amp. Cath.
C4	40	350	24063	PRS450/40		BR4035A		TVA-1611	Decoupling
C5	25	25	24006	PRS25/25		BR252A		TVA-1205	V. Output Cathode
C6	5	50	24038	PRS150/4		BR550		TVA-1303	Stabilizing Cap
C7	5	50	24038	PRS150/4		BR550		TVA-1303	Hor. Output Cath.
C8	3-9				829-3				Variable Trimmer
C9	.5-3				829-3				Variable Trimmer
C10	120			SI120	D6-121		GP2K-120	19C29	RF Amp. Dec.
C11	1000			SI1000	D6-102		GP2L-001	19C1	RF Amp. Fil.
C12	100			SI100N750	TCN-100		N750L-100	29C16	RF Coupling
C13	.5-3				829-3				Variable Trimmer
C14	20			SI20NPO	TCZ-20		NPOK-20		Osc. Grid Cap
C15	10			SI10N750	TCN-10		N750L-10	19C4	Fixed Trimmer
C16	.5-3				829-3				Variable Trimmer
C17A	1000		BPD-2X001		DD-2-102		812-2X001	29C7	Conv. Fil.
B	1000								RF Bypass
C18	10			SI10NPO	TCZ-10		NPOK-10	19C3	Fixed Trimmer
C19	72	500							Fixed Trimmer
C20	300			SI300	D6-301		GP2K-300	19C14	IF Coupling
C21	.05	200	23017	P288-05	DF-503	PTE4S5		2TM-S5	AGC Filter
C22	5000		23931	BPD-005	DD-502	1D5D5	811-005	29C1	1st V. IF Dec.
C23	5000		23931	BPD-005	DD-502	1D5D5	811-005	29C1	1st V. IF Cath.
C24	5000		23931	BPD-005	DD-502	1D5D5	811-005	29C1	2nd V. IF Dec.
C25	5000		23931	BPD-005	DD-502	1D5D5	811-005	29C1	3rd V. IF Dec.
C26	.05	200	23017	P288-05	DF-503	PTE4S5		2TM-S5	Video Coupling
C27	56		23922		TCZ-56		NPOM-56		Fixed Trimmer
C28	.05	600	23010	P688-05	DF-503	PTE6S5		6TM-S5	Video Coupling
C29	.1	600	23012	P688-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C30	.1	200	23012	P288-1	DF-104	PTE4P1		2TM-P1	Pic. Tube Cath.
C31	2.2		23956		TCZ-2.2				S. IF Coupling
C32	75			SI75N750	TCN-75		N750L-75		Fixed Trimmer
C33A	4000		23955	BPD-2X004	DD-2-502	1D5D4	822-2X004	36C2	S. IF Dec.
B	4000					1D5D4			S. IF Cath.
C34	5000		23931	BPD-005	DD-502	1D5D5	811-005	29C1	S. IF Dec.
C35	330		23944	SI330	D6-331	5W5T3	GP2K-330	19C14	Diode Load Cap
C36	.003	600	23016	P688-003	D6-302	PTE6D3	GP2M-003	6TM-D3	De-emphasis
C37	.02	600	23007	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C38	.02	600	23007	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C39	.02	600	23007	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C40	.005	600	23004	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Output Plate
C41	.005	600	23004	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Sync. Coupling
C42	.05	600	23017	P688-05	DF-503	PTE6S5		6TM-S5	Sync. Coupling
C43A	2000		* 23951	P688-002		PTE6D2	GP2M-002	6TM-D2	Integrator Net
B	5000			P688-005	PC-100 *	PTE6D5	811-005	6TM-D5	Integrator Net
C	5000			P688-005		PTE6D5	811-005	6TM-D5	Integrator Net
C44	4900	500	23207	1467-005	D6-502	1D5D5		1FM-23	Vert. Osc. Grid
C45	.05	600	23010	P688-05		PTE6S5		6TM-S5	Vert. Discharge
C46	.1	600	23019	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C47	.01	600	23023	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Vert. Sweep Coupling
C48	.2	400	23037	P488-22		GT4P2		4TM-P22	Vert. Osc. Dec.
C49	1500		23936	SI1500	D6-152	1W5D15	GP2L-0015	29C8	Hor. Sync. Coupling
C50	1500		23936	SI1500	D6-152	1W5D15	GP2L-0015	29C8	Hor. Sync. Coupling
C51	5000		† 23960	SI5000	D6-502	1D5D5	811-005	29C1	AFC Filter
C52	.1	200	23019	P288-1	DF-104	PTE4P1		2TM-P1	AFC Filter
C53	1200	500	23219						Horiz. M.V. Feedback
C54	.001	600	23001	P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	Horiz. M.V. Plate

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA PACKARD-BELL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C55	4000	500	23208	1464-004		1DR5D4		MS-24	Fixed Trimmer
C56	.01	600	23023	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Hor. Sweep Coupling
C57	.01	600	23023	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Hor. Sweep Coupling
C58	.2	400	23037	P488-22		GT4P2		4TM-P22	Hor. Output Screen
C59	.1	200	23012	P288-1		PTE4P1		2TM-P1	Damper Filter
C60	.033	600	23031	P688-033					Damper Filter
C61	.005	600	23004	P688-005	D6-502	PTE6D5		6TM-D5	Fixed Trimmer †
C62	.003	600	23016	P688-003	D6-302	PTE6D3		6TM-D3	Fixed Trimmer †
C63	200	2500	23958						Fixed Trimmer
C64	.05	600	23010	P688-05	DF-503	PTE6S5		6TM-S5	Hor. Sweep Coupling §
C65	.1	200	23019	P288-1	DF-104	PTE4P1		2TM-P1	Voltage Divider
C66	500	10000	23938	HV10C	TV3-501				Voltage Doubler Cap
C67	500	10000	23938	HV10C	TV3-501				H. V. Filter
C68	500	20000	23959	HV20C	TV3-502				H. V. Filter
C69	.01	125VAC	23932	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Line Filter
C70	.01	125VAC	23932	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Line Filter

* Items C43A, C43B, C43C, R56A, R56B and R56C are combined into one unit.
† Items C51 and R67 are combined into one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Packard Bell PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	5000Ω	½	25835	Concentrikit B17-114 ¶	RTV-212	SBB-627-S	Contrast Control - Front
B	500KΩ	½		B13-133 ¶			Volume Control - Rear
C	Shaft End			E-202 ¶			Attach Per Instructions In "Concentrikit".
D	Switch			76-1 ¶			Attach Per Instructions In "Concentrikit"
R2	1500Ω	4	25812		RTV-6	SVP-994	Focus Control - Wire Wound
R3A	500KΩ	½	25832	Q11-133	AG-58-S	AN-59	Brightness Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R3A Per Instructions
R4A	1Meg	½	25833	Q11-137	AG-61-S	AN-69	Vertical Hold Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R4A Per Instructions
R5A	3Meg	½	25805D	Q11-140	AM-85-S	AN-84	Height Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R5A Per Instructions
R6	5000Ω	4	25807B		RTV-10	VK-135	Vert. Linearity Control - Wire Wound

¶ Additional Parts To Be Used In "Concentrikit".

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PACKARD BELL PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R7	3900Ω	½		BTS-3900	Antenna Coil Shunt
R8	47KΩ 20%	½		BTS-47K	AGC Network
R9	10KΩ	½			RF Coil Shunt
R10	2200Ω 20%	½		BTS-2200	RF Amp. Decoupling
R11	4700Ω	½		BTS-4700	Mixer Grid
R12	220KΩ 20%	½			Mixer Grid
R13	15KΩ 20%	½			Mixer Plate
R14	10KΩ	½			Osc. Grid
R15	4700Ω	½		BTS-4700	Osc. Plate
R16	22KΩ	½	73041		1st Video IF Amp. Grid
R17	120Ω	½	73014	BTS-120	1st Video IF Amp. Cathode
R18	100Ω	½	73013	BTS-100	Decoupling
R19	12KΩ	½	73038*		2nd Video IF Transformer Shunt
R20	82Ω	½	73012	BTS-82	2nd Video IFAmp. Cathode
R21	22KΩ	½	73041		3rd Video IF Transformer Shunt
R22	47Ω	½	73009		3rd Video IF Transformer Cathode
R23	4700Ω	½	73033	BTS-4700	Video Det. Diode Load
R24	330Ω	½	73031	BTS-3300	AGC Load
R25	2.2Meg 20%	½	73165	BTS-2.2Meg	AGC Network
R26	100Ω	½	73013	BTS-100	Decoupling
R27	1Meg 20%	½	73161	BTS-1Meg	Video Amp. Grid
R28	3300Ω	½	73031	BTS-3300	Video Amp. Plate
R29	56KΩ	1	73246	BTA-56K	Video Amp. Plate Decoupling
R30	1Meg 20%	½	73161	BTS-1Meg	Video Output Grid
R31	470Ω	½	73021	BTS-470	Video Output Cathode
R32	4700Ω	2	73433	BTB-4700	Video Output Plate
R33	100KΩ 20%	½	73149	BTS-100K	Picture Tube Grid
R34	33KΩ	½	73043	BTS-33K	Picture Tube Cathode
R35	150KΩ 20%	½	73051	BTS-150K	ACC Anode Load
R36	3900Ω	½	73032	BTS-3900	Bias Network
R37	82Ω	½	73012	BTS-82	Sound IF Amp. Cathode
R38	1000Ω	½	73025	BTS-1000	Sound IF Amp. Decoupling
R39	10KΩ	½	73037	BTS-10K	Ratio Det. Diode Load
R40	10KΩ	½	73037	BTS-10K	Ratio Det. Diode Load
R41	470Ω	½	73021	BTS-470	Balancing
R42	22KΩ	½	73041	BTS-22K	De-emphasis
R43	4.7Meg	½	73169	BTS-4.7Meg	AF Amp. Grid
R44	220KΩ	½	73153	BTS-220K	AF Amp. Plate
R45	100KΩ	½	73149	BTS-100K	Output Grid
R46	270KΩ	½	73054	BTS-270K	Voltage Divider
R47	180KΩ	½	73052	BTS-180K	Voltage Divider
R48	2200Ω	½	73029	BTS-2200	Isolation
R49	330KΩ 20%	½	73155	BTS-330K	Voltage Divider
R50	330KΩ 20%	½	73155	BTS-330K	Sync. Sep. Cathode
R51	1.5Meg 20%	½	73163	BTS-1.5Meg	Sync. Sep. Plate
R52	1Meg 20%	½	73161	BTS-1Meg	Sync. Amp. Grid
R53	3300Ω	½	73031	BTS-3300	Sync. Amp. Cathode
R54	3300Ω	½	73031	BTS-3300	Sync. Amp. Plate
R55	3300Ω	½	73031	BTS-3300	Sync. Amp. Plate
R56A	22KΩ	½	23951 *	BTS-22K	Integrator
B	8200Ω	½		BTS-8200	Integrator
C	8200Ω	½		BTS-8200	Integrator
R57	470KΩ 20%	½	73157	BTS-470K	Vert. Osc. Grid
R58	150KΩ 20%	½	73151	BTS-150K	Vert. Osc. Plate
R59	10KΩ	½	73037	BTS-10K	Vert. Osc. Transformer Shunt
R60	1Meg 20%	½	73161	BTS-1Meg	Vert. Osc. Plate
R61	10KΩ	½	73037	BTS-10K	Vert. Peaking
R62	1Meg 20%	½	73161	BTS-1Meg	Vert. Output Grid

RESIST

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Packard Bell PART No.	IRC PART No.
R63	820Ω	1	73224	BTA-820
R64	100KΩ 20%	½	73149	BTS-100K
R65	100KΩ 20%	½	73149	BTS-100K
R66	4.7Meg 20%	½	73169	BTS-4.7M
R67	470KΩ	½	23960 †	BTS-470K
R68	10Ω	1	73201	
R69	3900Ω	½	73032	BTS-3900
R70	12KΩ	½	73038	BTS-12K
R71	12KΩ	½	73038	BTS-12K
R72	150KΩ	½	73051	BTS-150K
R73	220KΩ 20%	½	73153	BTS-220K
R74	390KΩ	½	73056	BTS-390K
R75	39KΩ	½	73044	BTS-39K
R76	100Ω	½	73013	
R77	220KΩ 20%	½	73153	BTS-220K
R78	300Ω	10	73615	1 3/4A-30
R79	10KΩ	5	73642	1 3/4A-10
R80	1000Ω	1	73225	BTA-1000
R81	.68Ω	1	73602	
R82	.68Ω	1	73602	
R83	1Meg 20%	1	73398	
R84	1Meg 20%	1	73398	
R85	500Ω	5	73617	1 3/4A-50

† Items R67 and C51 are combined into one unit.
* Items R56A, R56B, R56C, C43A, C43B and C43C are

TRANSFO

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	PACKAR PART
T1	117VAC ③ 1.7A	720VCT .200ADC	5V ② 3A	6.3V ② 1.9A	86036
			SEC. 4 6.3V ② 1.2A	SEC. 5 6.3V ② 4A	

TRANSFORM

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	PACKARD BELL PART No.	STANC PART
T2	230Ω	1350Ω	89031	A-8111
T3	210Ω Tap 49Ω	65Ω Tap 54Ω	89429	
		SEC. 2 6Ω		
		SEC. 3 0Ω		
		SEC 4 0Ω		
T4	1.15KΩ Tap 11Ω		89430	A8123
T5A	13Ω		29530	DY-7
B	45Ω			
T6	465Ω		29519	

③ Drill one new mounting hole.

TRANSFORM

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	Packard Bell PART No.	ST PA
T7	7.1KΩ	3.4Ω	510Ω	.6Ω	89426	A-3

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	PACKARD BELL PART No.	P
SP1A	PM	4.9Ω	83802 ①	12
B	PM	3.4Ω	83705 ②	10
	CONE DIA.	V. C. DIA.		
SP2A	11 9/16"	1"		
B	9 3/4"	3/4"		

FILT

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ω)	Packard PART
L1	.310A	42Ω	1.8 Henries	27005

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA PACKARD-BELL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C55	4000	500	23208	1464-504		1DR5D1		MS-24	Fixed Trimmer
C56	.01	600	23023	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Hor. Sweep Coupling
C57	.01	600	23023	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Hor. Sweep Coupling
C58	2	400	23037	P488-22		GT4P2		4TM-P22	Hor. Output Screen
C59	.1	200	23012	P288-1		PTE4P1		2TM-P1	Damper Filter
C60	.033	600	23031	P688-033					Damper Filter
C61	.005	600	23004	P688-005	D6-502	PTE6D5		6TM-D5	Fixed Trimmer †
C62	.003	600	23016	P688-003	D6-302	PTE6D3		6TM-D3	Fixed Trimmer †
C63	200	2500	23958						Fixed Trimmer
C64	.05	600	23010	P688-05	DF-503	PTE6S5		6TM-S5	Hor. Sweep Coupling ‡
C65	.1	200	23019	P288-1	DF-104	PTE4P1		2TM-P1	Voltage Divider
C66	500	10000	23938	HV10C	TV3-501				Voltage Doubler Cap
C67	500	10000	23938	HV10C	TV3-501				H.V. Filter
C68	500	30000	23959	HV30C	TV3-503				H.V. Filter
C69	.01	125VAC	23932	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Line Filter
C70	.01	125VAC	23932	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Line Filter

* Items C43A, C43B, C43C, R56A, R56B and R56C are combined into one unit.
† Items C51 and R67 are combined into one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Packard Bell PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	5000Ω	½		Concentrikit			
B	500KΩ	½		B17-114 ¶			
C	Shaft End		25835	B13-133 ¶	RTV-212	SBB-627-8	Contrast Control - Front Volume Control - Rear
D	Switch			E-202 ¶			Attach Per Instructions In "Concentrikit"
				T6-1 ¶			Attach Per Instructions In "Concentrikit"
R2	1500Ω	4	25812		RTV-6	SVP-994	Focus Control - Wire Wound
R3A	500KΩ	½	25832	Q11-133	AG-58-8	AN-59	Brightness Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R3A Per Instructions
R4A	1Meg	½	25833	Q11-137	AG-61-8	AN-89	Vertical Hold Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R4A Per Instructions
R5A	1Meg	½	25805B	Q11-140	AM-85-8	AN-84	Height Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R5A Per Instructions
R6	5000Ω	4	25807B		RTV-10	VK-135	Vert. Linearity Control - Wire Wound

¶ Additional Parts To Be Used In "Concentrikit".

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PACKARD BELL PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R7	3900Ω	½		BTS-3900	Antenna Coil Shunt
R8	47KΩ 20%	½		BTS-47K	AGC Network
R9	10KΩ	½			RF Coil Shunt
R10	2200Ω 20%	½		BTS-3200	RF Amp. Decoupling
R11	4700Ω	½		BTS-4700	Mixer Grid
R12	220KΩ 20%	½			Mixer Grid
R13	15KΩ 20%	½			Mixer Plate
R14	10KΩ	½			Osc. Grid
R15	4700Ω	½		BTS-4700	Osc. Plate
R16	22KΩ	½	73041		1st Video IF Amp. Grid
R17	120Ω	½	73014	BTS-120	1st Video IF Amp. Cathode
R18	100Ω	½	73013	BTS-100	Decoupling
R19	12KΩ	½	73038*		2nd Video IF Transformer Shunt
R20	82Ω	½	73043	BTS-82	2nd Video IFAmp. Cathode
R21	22KΩ	½	73041		3rd Video IF Transformer Shunt
R22	47Ω	½	73009		3rd Video IF Transformer Cathode
R23	4700Ω	½	73033	BTS-4700	Video Det. Diode Load
R24	330Ω	½	73031	BTS-3300	AGC Load
R25	2.2Meg 20%	½	73165	BTS-2.2Meg	AGC Network
R26	100Ω	½	73013	BTS-100	Decoupling
R27	1Meg 20%	½	73161	BTS-1Meg	Video Amp. Grid
R28	3300Ω	3	73031	BTS-3300	Video Amp. Plate
R29	56KΩ	1	73246	BTS-56K	Video Amp. Plate Decoupling
R30	1Meg 20%	½	73161	BTS-1Meg	Video Output Grid
R31	470Ω	½	73051	BTS-470	Video Output Cathode
R32	4700Ω	2	73433	BTS-4700	Video Output Plate
R33	100KΩ 20%	½	73149	BTS-100K	Picture Tube Grid
R34	33KΩ	½	73043	BTS-33K	Picture Tube Cathode
R35	150KΩ 20%	½	73251	BTS-150K	ACC Anode Load
R36	3900Ω	½	73032	BTS-3900	Bias Network
R37	82Ω	½	73013	BTS-82	Sound IF Amp. Cathode
R38	1000Ω	½	73025	BTS-1000	Sound IF Amp. Decoupling
R39	10KΩ	½	73029	BTS-10K	Ratio Det. Diode Load
R40	10KΩ	½	73037	BTS-10K	Ratio Det. Diode Load
R41	470Ω	½	73031	BTS-470	Balancing
R42	22KΩ	½	73041	BTS-22K	De-emphasis
R43	4.7Meg	½	73169	BTS-4.7Meg	AF Amp. Grid
R44	220KΩ	½	73153	BTS-220K	AF Amp. Plate
R45	100KΩ	½	73149	BTS-100K	Output Grid
R46	270KΩ	½	73054	BTS-270K	Voltage Divider
R47	180KΩ	½	73052	BTS-180K	Voltage Divider
R48	2200Ω	½	73029	BTS-2200	Isolation
R49	330KΩ 20%	½	73165	BTS-330K	Voltage Divider
R50	330KΩ 20%	½	73155	BTS-330K	Sync. Sep. Cathode
R51	1.5Meg 20%	½	73163	BTS-1.5Meg	Sync. Sep. Plate
R52	1Meg 20%	½	73161	BTS-1Meg	Sync. Amp. Grid
R53	3300Ω	½	73031	BTS-3300	Sync. Amp. Cathode
R54	3300Ω	½	73031	BTS-3300	Sync. Amp. Plate
R55	3300Ω	½	73031	BTS-3300	Sync. Amp. Plate
R56A	22KΩ	*	23961	BTS-22K	Integrator
B	8200Ω			BTS-8200	Integrator
C	8200Ω			BTS-8200	Integrator
R57	470KΩ 20%	½	73157	BTS-470K	Vert. Osc. Grid
R58	150KΩ 20%	½	73151	BTS-150K	Vert. Osc. Plate
R59	10KΩ	½	73037	BTS-10K	Vert. Osc. Transformer Shunt
R60	1Meg 20%	½	73161	BTS-1Meg	Vert. Osc. Plate
R61	10KΩ	½	73037	BTS-10K	Vert. Peaking
R62	1Meg 20%	½	73161	BTS-1Meg	Vert. Output Grid

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Packard Bell PART No.	IRC PART No.	IDENTIFICATION CODES
R63	820Ω	1	73234		
R64	100KΩ 20%	½	73149	BTS-100K	Horiz. Phase Det. Diode Load
R65	100KΩ 20%	½	73149	BTS-100K	Horiz. Phase Det. Diode Load
R66	4.7Meg 20%	½	73169	BTS-4.7Meg	Horiz. Phase Det. Diode Load
R67	470KΩ	1	23960 †	BTS-470K	Horiz. AFC Filter
R68	10Ω	1	73201		Horiz. AFC Filter
R69	3900Ω	½	73032	BTS-3900	Horiz. MV Cathode
R70	12KΩ	½	73038	BTS-12K	Horiz. MV Grid
R71	12KΩ	½	73038	BTS-12K	Horiz. MV Plate
R72	150KΩ	½	73051	BTS-150K	Horiz. MV Plate
R73	220KΩ 20%	½	73153	BTS-220K	Horiz. Discharge Grid
R74	390KΩ	½	73056	BTS-390K	Horiz. Discharge Plate
R75	39KΩ	½	73044	BTS-39K	Horiz. Peaking
R76	10Ω	1	73013		Parasitic Supp.
R77	220KΩ 20%	½	73153	BTS-220K	Horiz. Output Grid
R78	300Ω	10	73615	1 3/4A-300	Horiz. Output Cathode - Wire Wound
R79	10KΩ	5	73842	1 3/4A-10K	Horiz. Output Screen - Wire Wound
R80	1000Ω	1	73225	BTA-1000	Horiz. Linearity Coil Shunt
R81	.68Ω	1	73602		HV Rectifier Filament - Wire Wound
R82	.68Ω	1	73602		HV Rectifier Filament - Wire Wound
R83	1Meg 20%	1	73398		HV Rectifier Load
R84	1Meg 20%	1	73398		HV Rectifier Load
R85	500Ω	5	73817	1 3/4A-500	Surge Limiter - Wire Wound

† Items R67 and C51 are combined into one unit.
* Items R56A, R56B, R56C, C43A, C43B and C43C are combined into one unit.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA PACKARD BELL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	720VCT	5V	6.3V	98035		P-3066	
	② 1.7A	.200ADC	① 3A	② 1.9A				
			SEC. 4	SEC. 5				
			6.3V	6.3V				
			① 1.2A	② 4A				

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA PACKARD BELL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	230Ω	135Ω	89031	A-8111 ③	A-3000	TB0-1 ③	Vert. Block Osc.
T3	210Ω	65Ω Tap	89429		HVO-6		Horiz. Output
	Tap 49Ω	54Ω					
		SEC. 2					
		6Ω					
		SEC. 3					
		0Ω					
		SEC. 4					
		0Ω					
T4	1.15KΩ		89430	A8123	A-3036	TB0-5 ③	Vert. Output
	Tap 11Ω						
T5A	13Ω		29530	DY-7	MD-70		Horiz. Deflection Coil
B	45Ω				MF-2		Vert. Deflection Coil
T6	465Ω		29519				Focus Coil

③ Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA Packard Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	7.1KΩ	3.4Ω	510Ω	.6Ω	89426	A-3878 ③	A-3020 ③	R0-13 ③	③ Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA PACKARD BELL PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1A	PM	4.8Ω	83802 ①	12J12	12A4A	① Used in Model 2901-TV, 2804A-TV
B	PM	3.4Ω	83705 ②	10J12	10A4	② Used in Models 2301-TV
	CONE DIA.	V. C. DIA.				
SP2A	11 9/16"	1"				
B	9 3/4"	3/4"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D.C. RESISTANCE	RATINGS INDUCTANCE (@ CURRENT 1000 m/a)	REPLACEMENT DATA Packard Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.310A	42Ω	1.8 Henries	27005	C-2326	C-2991	TR-3300③	③ Drill one new mtg. hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA Packard Bell PART No.	MEISSNER PART No.	NOTES
L2	Ant. Coil	0Ω	0Ω			May be ordered by stating Channel Number desired
L3	Fil. Choke	0Ω				Part of Tuner Part #10528
L4	RF, Mixer Grid and Osc. Coils	0Ω				May be ordered by stating Channel Number desired Part of Tuner Part # 10528
L5	Fil. Choke	0Ω				Part of Tuner Part # 10528
L6	1st Video IF	.5Ω				Part of Tuner Part # 10528
L7	Trap Coil	.5Ω				Part of Tuner Part # 10528
L8	1st Video IF Coupling	1Ω		29523		3.35 Microhenries Wound on 3.3KΩ Resistor
L9	2nd Video IF	.3Ω	.3Ω	29055		
L10	3rd Video IF	.3Ω	.3Ω	29055		
L11	4th Video IF	.3Ω	.3Ω	29056		
L12	Peaking	3.7Ω		29520		36 Microhenries (Black Dot)
L13	Peaking	9.6Ω		29506		19-1921 ① 180 Microhenries Wound on 39KΩ Resistor (White Dot)
L14	4.5MC Trap	1.5Ω		29529		
L15	Peaking	7.5Ω		29506		19-1921 ② 120 Microhenries Wound on 22KΩ Resistor (Blue Dot)
L16	Peaking	3.7Ω		29520		36 Microhenries (Black Dot)
L17	Peaking	6.7Ω		29507		19-1920 93 Microhenries (Red Dot)
L18	Sound IF	1.1Ω		29053		
L19	Ratio Det. Trans.	5Ω	3Ω	29054		
L20	Horiz. Freq. Coil	75Ω		29527		
L21	Horiz. Lin.	5.7Ω		29531		Tap at 1.6Ω
L22	Horiz. Width	2.3Ω		29532		

① Parallel with 39KΩ Resistor.
② Parallel with 22KΩ Resistor

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA PACKARD BELL PART No. FUSE	PACKARD BELL PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M1	3AG	1/4A ② 250V	45004		312.250		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA Packard Bell PART No.	NOTES
M2	Bayonet	6 -8	.25	Blue	54001	Type # 44 Channel Selector

MISCELLANEOUS

ITEM No.	PART NAME	Packard Bell PART No.	NOTES
M3	RF Tuner	10528	
M4	Ion Trap	28049	Model 2301
B2	Trimmer	23420	Horiz. Drive (300-800MMF)
	Safety Glass	55020	Model 2801-TV
	Safety Glass	55024	Model 2801A-TV
	Knob	52067-1	Channel Selector
	Knob	52068	Fine Tuning
	Knob	52069-1	Volume
	Knob	52070	Contrast

PHONO CARTRIDGE and NEEDLE

ITEM No.	Packard-Bell PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	SHURE PART No. CARTRIDGE	SHURE PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	REMARKS
M5		ACD-27	A-1 A-3	W22AB-T	A62A A65MG	96-T	0-3 or S-3 and 0-1 or S-1	

ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PACKARD BELL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V24	FM RF Amp. - FM Mixer	12AT7	12AT7	9A	
V25	FM Osc. -AM Conv.	6BE6	6BE6	7CH	
V26	1st FM,AM IF Amp.	6BA6	6BA6	7BK	
V27	2nd FM IF Amp-AM Det.	6AU6	6AU6	7BK	
V28	Ratio Det.	6AL5	6AL5	6BT	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PACKARD BELL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C71	5	50	24038	PRS150/4		BR550		TVA-1303	Stabilizing Cap
C72	470		23916	SI470	D6-471	5W5T5	GP2K-470	19C15	RF Coupling
C73	470		23916	SI470	D6-471	5W5T5	GP2K-470	19C15	FM RF Amp. Dec.
C74	100		23914	SI100	D6-101	5W5T1	GP1K-100	19C11	RF Coupling
C75	100		23914	SI100	D6-101	5W5T1	GP1K-100	19C11	RF Coupling
C76	100		23941	SI100NPO	TCZ-100	5R5T1	NPOM-100	36C10	Fixed Trimmer
C77	10000		23939	BPD-01	DD-103	PTE6S1	821-01	36C1	AVC Filter
C78	33		23940	SI33	D6-330	5W5Q3	GP1K-33	19C24	Osc. Grid Cap
C79	2.2				TCZ-N750				Osc. Feedback
C80	10000		23939	BPD-01	DD-103	PTE6S1	821-01	36C1	Osc. Anode Bypass
C81	100		23941	SI100NPO	TCZ-100	5R5T1	NPOM-100	36C10	Fixed Trimmer
C82	10000		23939	BPD-01	DD-103	PTE6S1	821-01	36C1	AVC Filter
C83	10000		23939	BPD-01	DD-103	PTE6S1	821-01	36C1	1st IF Dec.
C84	10000		23939	BPD-01	DD-103	PTE6S1	821-01	36C1	RF Bypass
C85	10000		23939	BPD-01	DD-103	PTE6S1	821-01	36C1	1st IF Fil.
C86A	100	*	23930	SI100	*PC-50	5W5T1	GP1K-100	19C11	Diode RF Filter
B	100			SI100		5W5T1	GP1K-100	19C11	Diode RF Filter
C87	10000		23939	BPD-01	DD-103	PTE6S1	821-C	36C1	2nd IF Dec.
C88	150		23942	SI150	D6-151	5W5T15	GP2K-150	19C12	Diode Load Cap †
C89	150		23942	SI150	D6-151	5W5T15	GP2K-150	19C12	Diode Load Cap †
C90	.002	600		P688-002	D6-202	PTE6D2	GP2M-002	6TM-D2	De-emphasis
C91	5000		23931	BPD-005	DD-502	1D5D5	811-005	29C1	Ratio Det. Fil.
C92	180	500		SI180	D6-181		GP2K-180		Tone Comp

* Items C86A, C86B and R90 are combined into one unit.
† When either item C88 or C89 are replaced, replace with capacitor of equal value.
‡ Some models use .01MFD in place of items C61 and C62.
§ Some models use .1MFD in this application.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Packard Bell PART No.	IRC PART No.	IDENTIFICATION CODES
R86	22KΩ	1/2	73041		FM Osc. Grid
R87	220Ω	1/2	73017	BTS-220	FM RF Amp. Cathode
R88	1000Ω	1/2	73025	BTS-1000	FM RF Amp. Decoupling
R89	470KΩ	1/2	73157		FM Mixer Grid
R90	6200Ω	2			Decoupling - See Note
R91	100KΩ	1/2	73149	BTS-100K	AVC Network
R92	68Ω	1/2	73011		1st IF Amp. Cathode
R93	2200Ω	1/2	73029	BTS-2200	1st IF Amp. Decoupling
R94	120Ω	1/2	73104	BTS-120	2nd FM IF Amp. Cathode
R95	2200Ω	1/2	73029	BTS-2200	2nd FM IF Amp. Decoupling
R96	6800Ω	1/2	73035	BTS-6800	Ratio Det. Diode Load
R97	6800Ω	1/2	73035	BTS-6800	Ratio Det. Diode Load
R98	220Ω	1/2	73017	BTS-220	Balancing
R99	27KΩ	1/2	73042	BTS-27K	De-emphasis
R100	47KΩ	1/2	23930 *	BTS-47K	Diode Filter
R101	220KΩ	1/2	73153	BTS-220K	AVC Load
R102	1Meg	1/2	73161	BTS-1Meg	AVC Network
R103	270KΩ	1/2	73054	BTS-270K	Series Phono

* Items R90, C86A and C86B are combined into one unit.
Note: Some models use 6800Ω resistor in this application.

COILS (RF-IF)

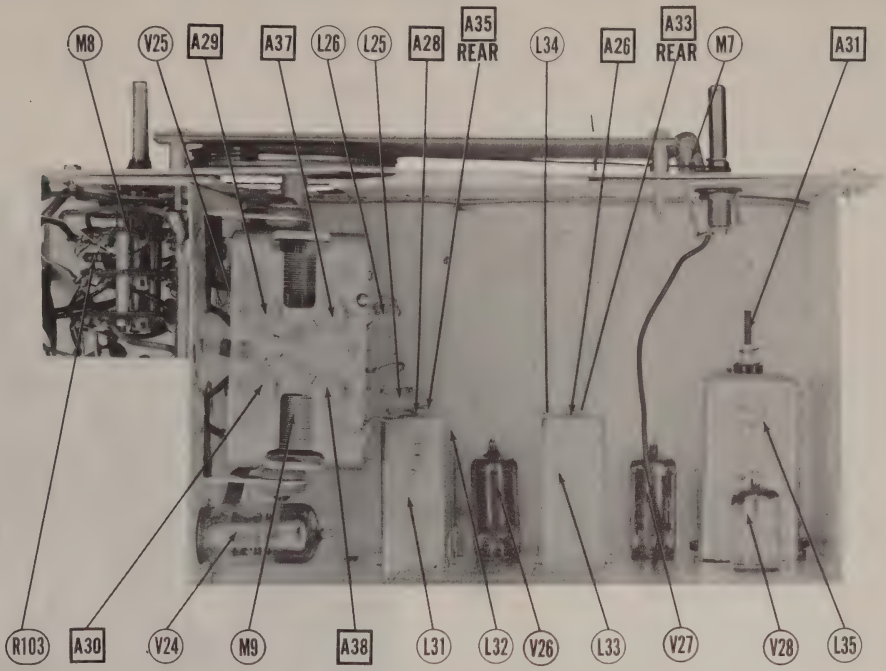
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: Packard Bell PART No.	REPLACEMENT DATA: MEISSNER PART No.	NOTES
L23	FM Ant. Coil	0Ω		29441		Wound on 1.5KΩ Resistor
L24	RF Choke	.1Ω		29104		
L25	FM RF Coil	0Ω		29118		
L26	FM Osc. Coil	0Ω		29221		
L27	Loop Ant.	1.5Ω		29334		
L28	Parasitic Suppressor	0Ω		73005		Wound on 22Ω Resistor
L29	Cath. Choke	.1Ω		29104		
L30	AM Osc. Coil	6Ω		29202A		Tap at .6Ω
L31	1st AM IF	17Ω	17Ω	29050		
L32	1st FM IF	.1Ω	1.2Ω	29052		
L33	2nd AM IF	17Ω	15Ω	29051		
L34	2nd FM IF	1.8Ω	.1Ω	29057		
L35	Ratio Det. Trans.	2.2Ω	.1Ω	29018		

DIAL LIGHTS

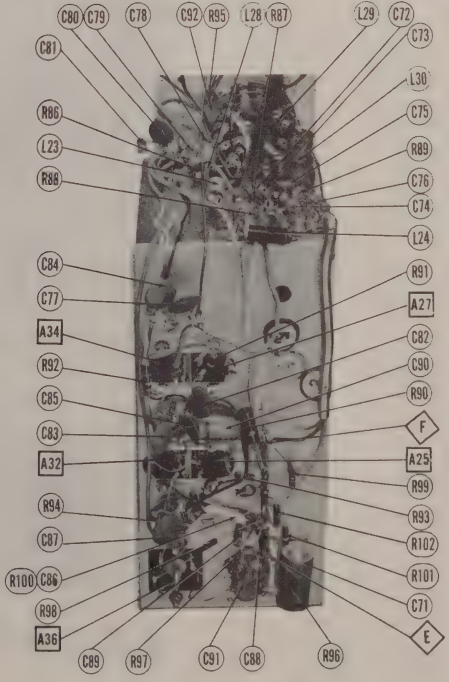
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: Packard Bell PART No.		NOTES
M6	Bayonet	6-8	.25	Blue			Type # 44 Phono Compartment
M7	Bayonet	6-8	.15	Brown			Type # 47 Radio Dial

MISCELLANEOUS

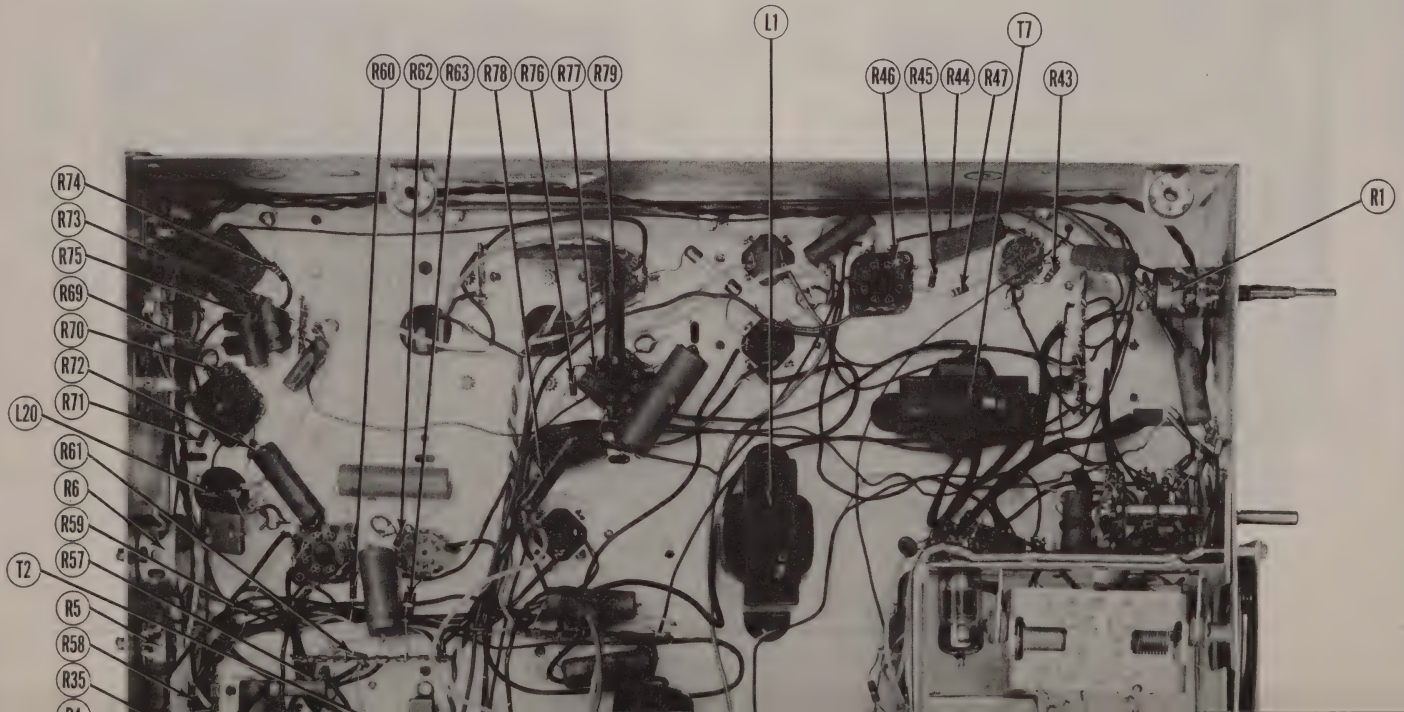
ITEM No.	PART NAME	Packard - Bell PART No.	NOTES
M8	Switch	86028	Function (TV-Phono-AM-FM)
M9	Tuning Capacitor	23506	18-584MMF, 30-333MMF
	Dial Scale	38117	
	Knob	52071	Function Switch
	Knob	52071	AM-FM Tuning

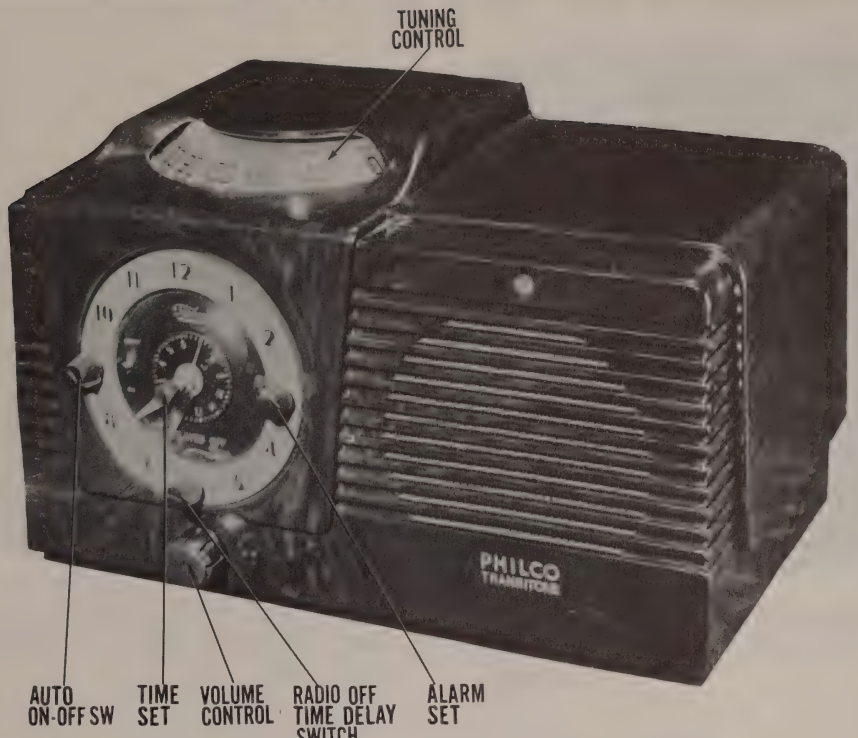


RADIO TUNER



RADIO TUNER


L1
T7
R60
R62
R63
R78
R76
R77
R79
R46
R45
R44
R47
R43
R74
R73
R75
R69
R70
R72
R71
L20
R61
R6
R59
R57
T2
R5
R58
R35
R1



PHILCO
MODELS 51-537, 51-537I

PHILCO
MODELS 51-537, 51-537I

PHILCO MODEL 51-537

TRADE NAME	Philco, Models 51-537, 51-537-I
MANUFACTURER	Philco Corp., Tioga and "C" Sts., Philadelphia, Pa
TYPE SET	AC Operated Superheterodyne Receiver With Loop Antenna
TUBES (FIVE)	Types 7A8 Converter, 14A7 IF Amp., 14B6 Det.-AVC-AF Amp., 50L6GT Power Output, 35Y4 Rectifier

POWER SUPPLY 110-120 Volts AC RATING .250 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST 540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.002MFD	High side to pin 8 (grid) and 12SA7 (V2). Low side to chassis.	455KC	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output	"	A6	"

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PARTS LIST AND DESCRIPTIONS

PHILCO MODEL 51-537

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	7A8	7A8	8U	
V2	IF Amplifier	14A7	14A7	8V	
V3	Det.-AVC-AF Amp.	14B6	14B6	8W	
V4	Power Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35Y4	35Y4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	30-2575-27	PRS150/40-30-20		EDL44215		TVA-3451	Filter Orange
B	30	150							Filter Red
C	30	150							Filter Blue
C2	5		30-1230	SI5	TCZ-4.7	5W5V5	GP1K-5	MS-55	Ant. Coupling
C3	.05	200	61-0122	P288-05	DF-503	PTE485		2TM-S5	AVC Filter
C4	.2	400	45-3500-3	P488-22		GT4P2		72P53	Line Isolation
C5	47	500	60-00475417	1468-00005	D6-470	5W5Q5	GP1K-47	1FM-45	Osc. Grid Cap
C6	7.5		30-1224-65						Fixed Trimmer
C7	.05	200	61-0122	P288-05	DF-503	PTE485		2TM-S5	Decoupling
C8	.01	400	61-0120	P488-01	D6-103	PTE451	821-01	4TM-S1	Audio Coupling
C9	.01	600	61-0120	P688-01	D6-103	PTE651	821-01	6TM-S1	Audio Coupling
C10	330		62-133001001	SI330	D6-331	5W5T3	GP2K-330	19C14	Output Grid
C11	.02	400	61-0108	P488-02	DF-203	PTE452		4TM-S2	Output Plate
C12	.04	400	45-3500-2	P688-04		PTE654		6TM-S4	Line Filter

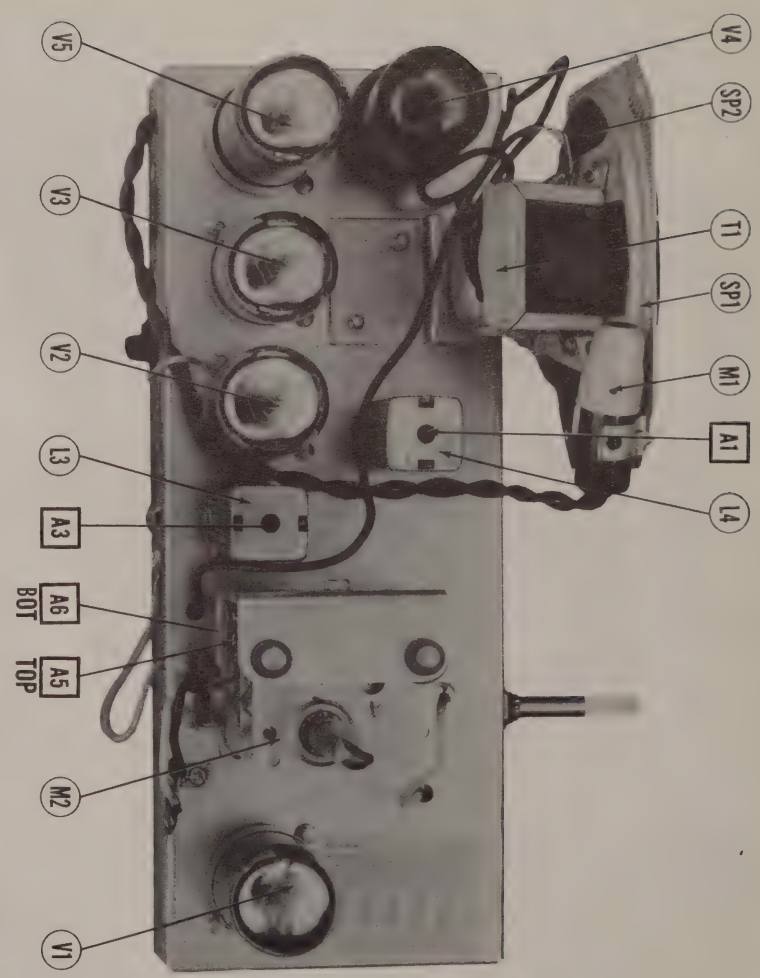
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	33-5565-6	Q13-133	AG-60-Z	B-60	Volume Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R1A Per Instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
R2	150KΩ	½	66-4158340	BTS-150K	Antenna Isolation
R3	150KΩ	½	66-4158340	BTS-150K	Isolation
R4	100KΩ	½	66-4108340		Osc. Grid
R5	27KΩ	½	66-3278340	BTS-27K	Decoupling
R6	47KΩ	½	66-3478340	BTS-47K	Diode Filter
R7	2.2Meg	½	66-5228340	BTS-2.2Meg	AVC Network
R8	3.3Meg	½	66-5338340	BTS-3.3Meg	AF Amp. Grid
R9	470KΩ	½	66-4478340	BTS-470K	AF Amp. Plate
R10	470KΩ	½	66-4478340	BTS-470K	Output Grid
R11	130Ω	½	66-1128340		Output Cathode
R12	1200Ω	½	66-2128340	BTS-1200	Filter
R13	220Ω	1	66-1224340	BTA-220	Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.2KΩ	4Ω	210Ω	.7Ω		A-3332	A-2928 ①	R0-2 ①	① Remount output transformer

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PHILCO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	36-1627-8	ST-113 MOD. P4-X	4A1	
	PM	4Ω				
SP2	CONE DIA.	V. C. DIA				
	4"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	PHILCO PART No.	MEISSNER PART No.	
L1	Loop Antenna	3Ω		32-4052-32		
L2	Osc. Coil	2.7Ω	7.5Ω	32-4263		
L3	1 st IF	22Ω	22Ω	32-4160-6A	16-6678	
L4	2nd IF	16Ω	16Ω	32-4240A	16-6770	

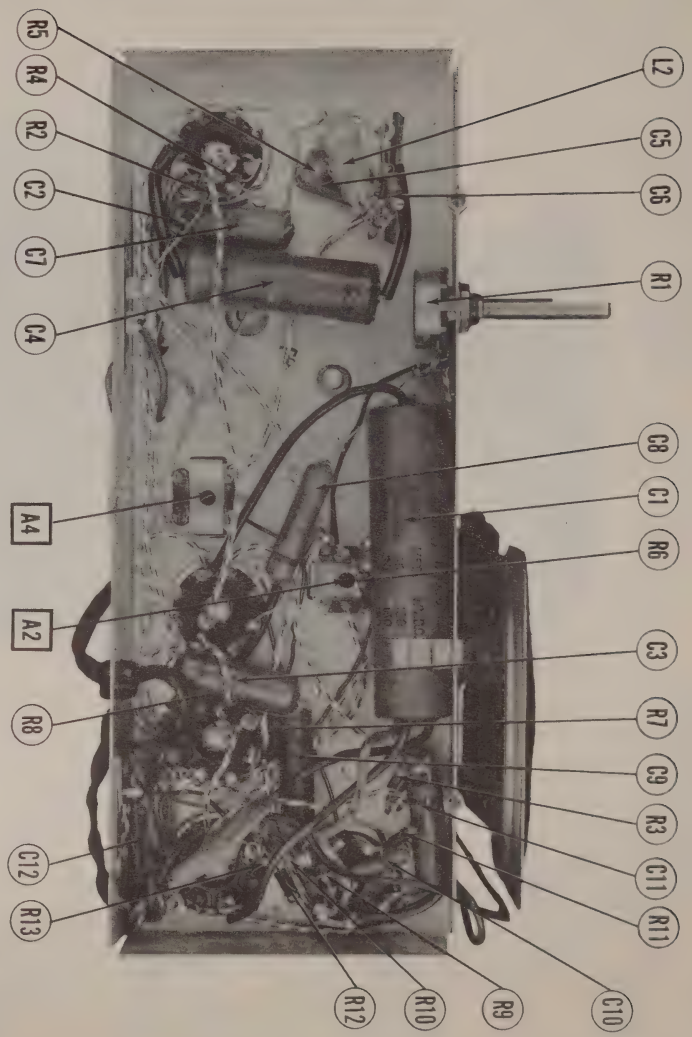
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					PHILCO PART No.		
M1	Bayonet	6-8	.15	Brown	34-2068		Type # 47

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M2	2 Gang Var. Cap	31-2751-5	
	Dial Scale	54-5055-2	Tuning Knob
	Clock	76-4640	Model 51-537 (60V)
	Clock	76-4840	Model 51-537 (60V)
	Cabinet	10745	Model 51-537
	Cabinet	10745-1	Model 51-537-I

CHASSIS—BOTTOM VIEW

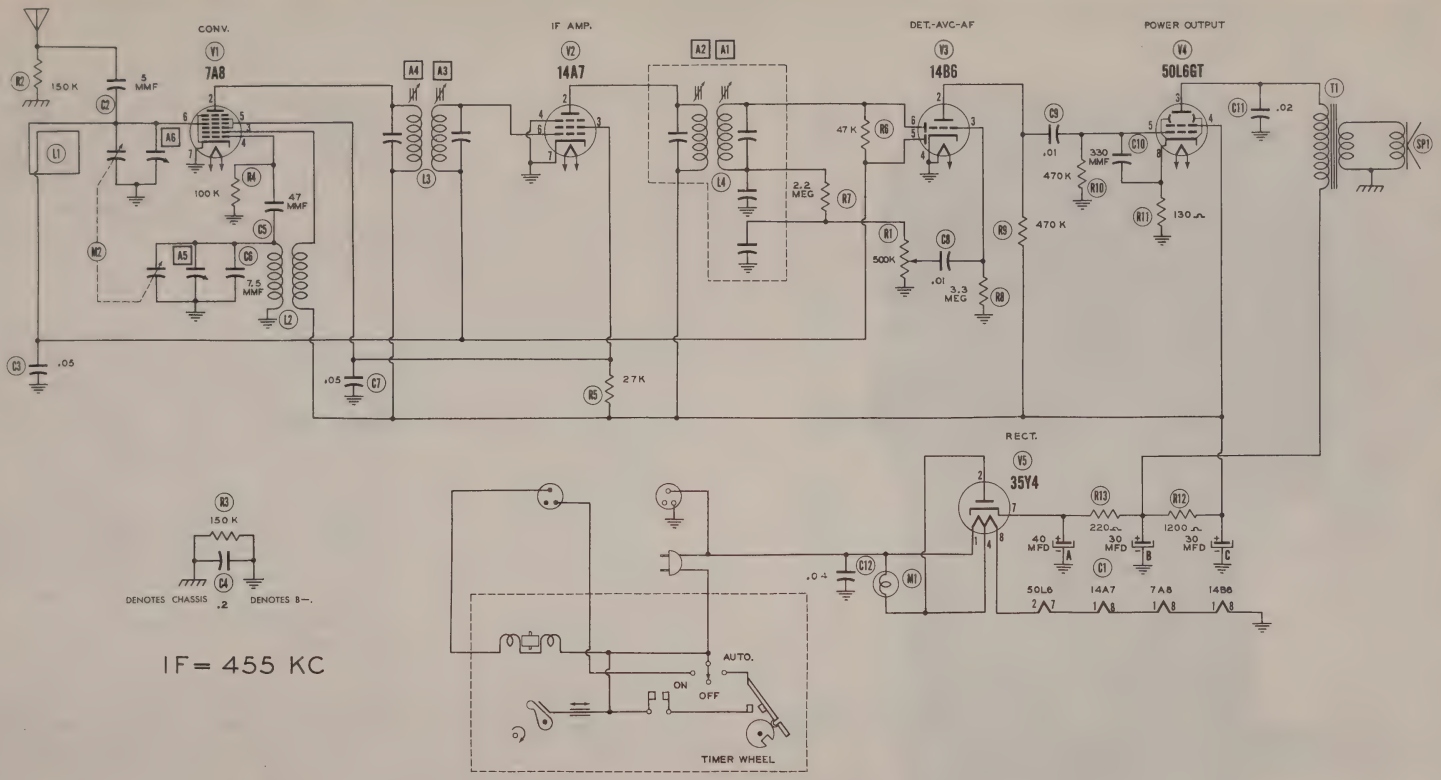


SET 126

FOLDER 10

PHILCO MODEL 51-537

PHILCO MODEL 51-537



IF = 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	7A8	23VAC	95VDC	95VDC	5-6.5VDC	45VDC	-.6VDC	0V	12VAC
V 2	14A7	35VAC	95VDC	45VDC	0V	0V	-.6VDC	0V	23VAC
V 3	14B6	12VAC	40VDC	-.5VDC	0V	-.6VDC	-.5VDC	0V	0V
V 4	50L6GT	0V	85VAC	100VDC	95VDC	0V	40VDC	35VAC	6VDC
V 5	35Y4	117VAC	100VAC	0V	100VAC	105VDC	0V	120VDC	85VAC

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	7A8	25Ω	†1.4KΩ	†1.4KΩ	100KΩ	†28KΩ	2.8Meg	0Ω	13Ω
V 2	14A7	37Ω	†1.4KΩ	†28KΩ	0Ω	0Ω	2.8Meg	0Ω	25Ω
V 3	14B6	13Ω	††470KΩ	3.3Meg	0Ω	2.8Meg	550KΩ	0Ω	0Ω
V 4	50L6GT	Inf.	90Ω	†430Ω	†1.4KΩ	470KΩ	††470KΩ	37Ω	130Ω
V 5	35Y4	120Ω	115Ω	Inf.	115Ω	†220Ω	Inf.	50KΩ	90Ω

† MEASURED FROM PIN 7 OF V 5

THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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126-10

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RCA VICTOR
MODEL 45-EY-3

RCA VICTOR
MODEL 45-EY-3

RCA VICTOR MODEL 45-EY-3

TRADE NAME	RCA Victor, Model 45-EY-3 (Ch. RS-136, RS-136A)
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, N. J.
TYPE SET	AC Operated Phonograph With 45RPM Record Changer Unit
TUBES	(RS-136) 6SQ7 Pre-Amp., 25L6GT Power Output, Selenium Rectifier (RS-136A) 12SQ7 Pre-Amp., 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .36 Amp. @ 117 Volts AC (RS-136) .44 Amp. @ 117 Volts AC (RS-136A)

RECORD CHANGER UNITS (RS-136) - RP-190-1
(RS-136A) - RP-190-3

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PARTS LIST AND DESCRIPTIONS

RCA VICTOR
MODEL 45-EY-3

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1A	Phono Pre-Amp.	6SQ7	6SQ7	8Q	Used in chassis RS-136
B	Phono Pre-Amp.	12SQ7	12SQ7	8Q	Used in chassis RS-136A
V2A	Power Output	25L6GT	25L6GT	7AC	Used in chassis RS-136
B	Power Output	50L6GT	50L6GT	7AC	Used in chassis RS-136A
V3	Rectifier	35Z5GT	35Z5GT	6AD	Used in chassis RS-136A

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	80	150	75980	PRS150/80-40		EDL8415		TVA-3455	Filter Red
B	50	150							Filter Green
C2	.005	200	73920	P288-005	D6-502	PTE6D5	811-005	6TM-D5	Tone Comp.
C3	.01	200	73561	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Audio Coupling
C4	.01	200	73561	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Audio Coupling
C5	.01	400	73561	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Output Plate
C6	.1	400	73551	P488-1	DF-104	PTE4P1		4TM-P1	Line Isolation

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	1/2	38407	Q13-137X	AK-111	BT-72	Volume Control
B	Shaft			Not req.	FS-3	Not req.	Attach to R1A Per Instructions.

RESISTORS

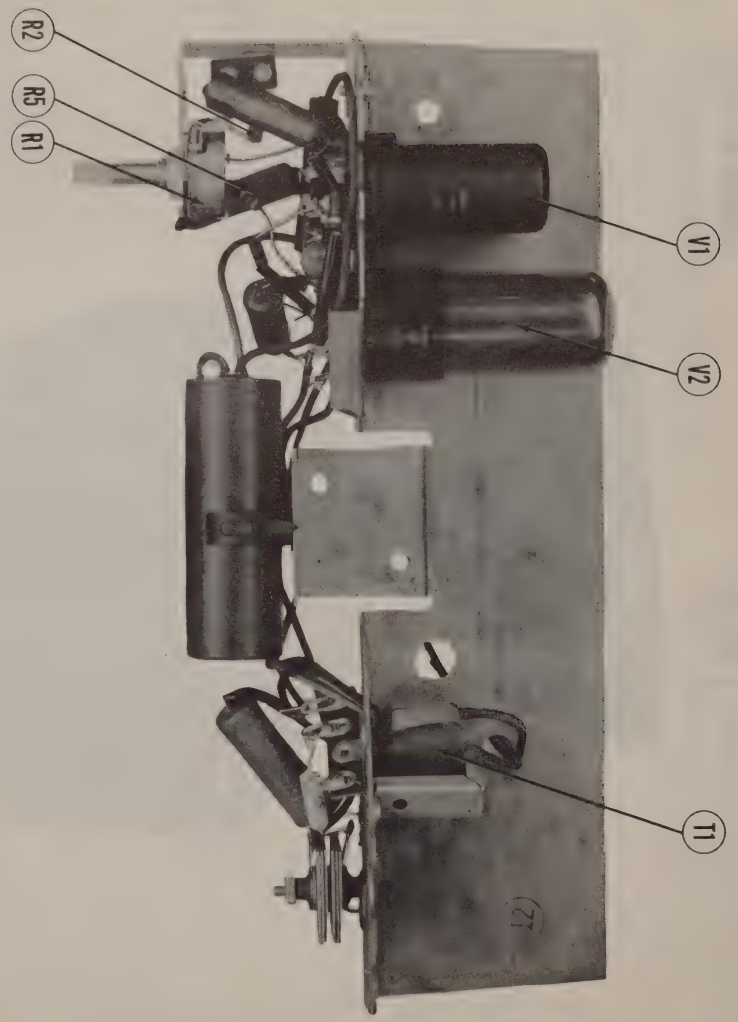
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	IDENTIFICATION CODES
R2	39KΩ	1/2		BTS-39K	Tone Compensation
R3	4.7Meg	1/2		BTS-4.7Meg	AF Amp. Grid
R4	270KΩ	1/2		BTS-270K	AF Amp. Plate
R5	270KΩ	1/2		BTS-270K	Output Grid
R6	150Ω	1/2		BTS-150	Output Cathode
R7	1500Ω	1/2		BTS-1500	Decoup
R8	33Ω	1/2	73237		Rectifier Ballast - Wire Wound
R9	22Ω	2	33378	BW-2-22	Filament String - Wire Wound - See Note

Note: Chassis RS-136A Uses 120Ω 5 Watt Resistor In This Application. (Part # 72314)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	2.9KΩ	4.2Ω	370Ω Tap 39Ω	.7Ω	75939		A-2928		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA RCA PART No.	VIKING PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				
SP1	PM	4.2Ω	75959	46J6	46A1	
	CONE DIA.	V. C. DIA.				
SP2	4"X6"	9/16"				

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA RCA PART No.	SYLVANIA PART No.	SELETRON PART No.	NOTES
M1	.060A	75940	NB-5	5M4	Used in Chassis RC-136 Only

PHONO CARTRIDGE and NEEDLE

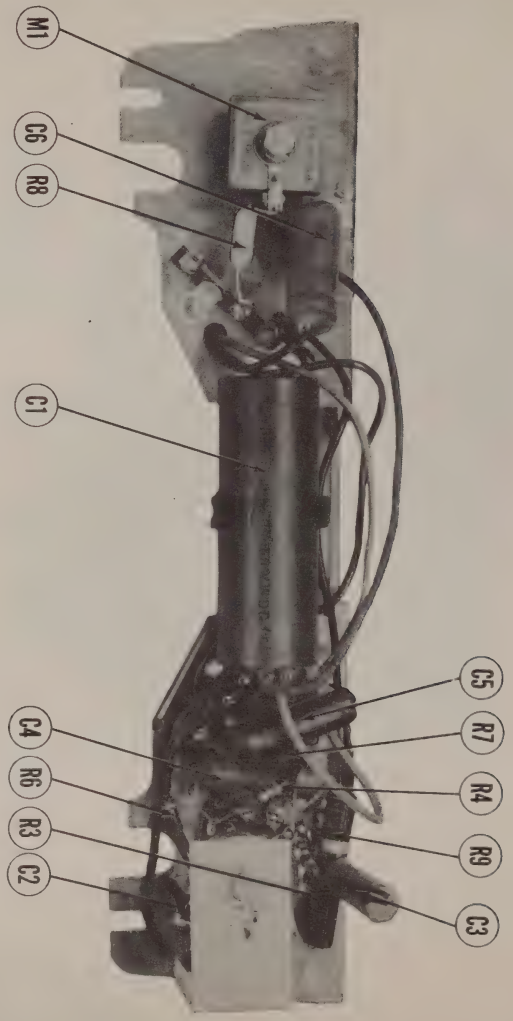
ITEM No.	REPLACEMENT DATA RCA PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		REMARKS
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M2	75476	CAC-J	Q-33	W21AR	A65MG	34	0-1 or 8-1	

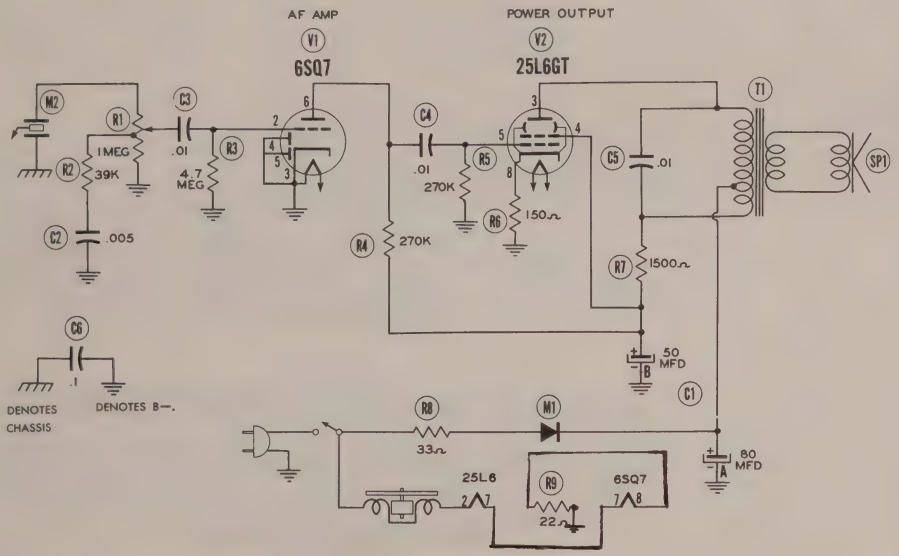
ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

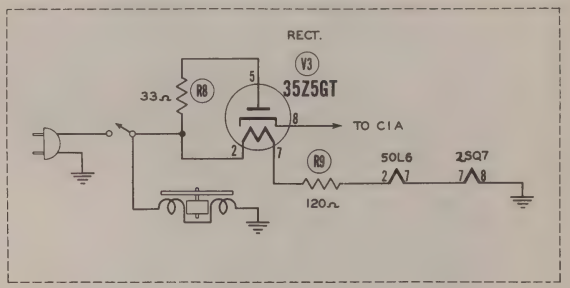
MISCELLANEOUS

ITEM No.	PART NAME	RCA PART No.	NOTES
	Phono Motor	75937	85 Volt (Ch. RS-136)
	Phono Motor	75760	115 Volt (Ch. RS-136A)
	Cabinet	75926	
	Knob	75945	Volume

CHASSIS—BOTTOM VIEW







VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SQ7	0V	-.4VDC	0V	0V	0V	70VDC	12VAC	5.8VAC
V 2	25L6GT	0V	35VAC	110VDC	120VDC	0V	125VDC	12VAC	8.9VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SQ7GT	Inf.	4.7Meg	0Ω	0Ω	0Ω	†270KΩ	25Ω	22Ω
V 2	25L6GT	Inf.	50Ω	†330Ω	†1.5KΩ	270KΩ	†39Ω	25Ω	150Ω

† MEASURED FROM OUTPUT OF M 1

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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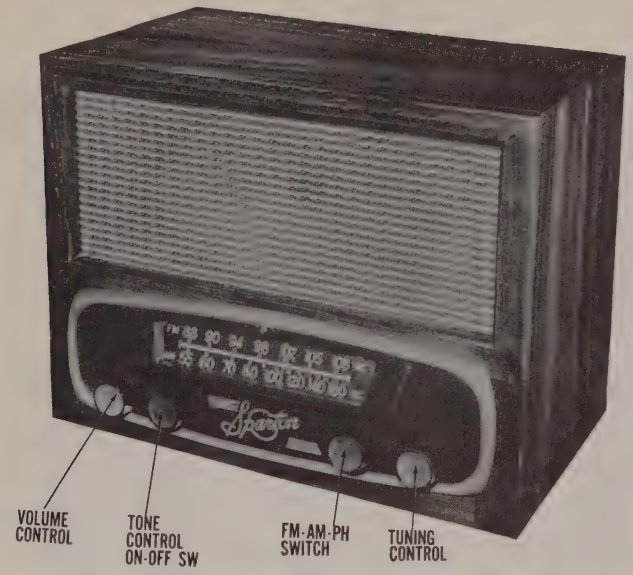
126-11

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

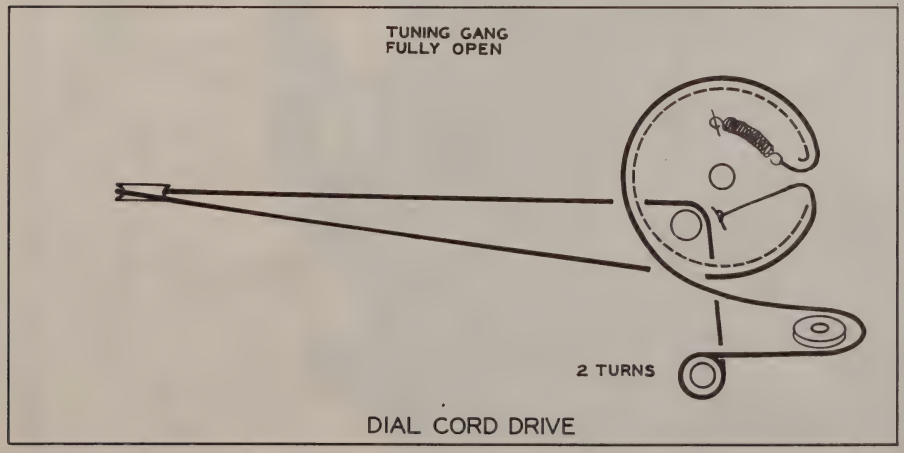
SPARTON MODELS 141XX, 142XX, 1040XX, 1041XX, 1085, 1086, 1090, 1091 (Ch. 8W10)



SPARTON MODEL 141XX

TRADE NAME	Sparton, Models 141XX, 142XX, 1040XX, 1041XX, 1085, 1086, 1090, 1091 (Ch. 8W10)
MANUFACTURER	Sparks - Withington Co., Jackson, Mich.
TYPE SET	AC Operated AM-FM Superheterodyne Receiver With Loop Antenna
TUBES (EIGHT)	Types 12AT7 FM RF Amp. And Mixer, 6BE6 FM Osc. - AM Conv., 6BA6 Or 6AU6 1st FM IF-AM IF Amp., 6BA6 Or 6AU6 FM 2nd IF Amp., 6AL5 Ratio Det., 6AV6 Det.-AVC-AF Amp., 6V6GT Power Output, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC
TUNING RANGE - BROADCAST	540 - 1650 KC FREQ. MOD. 88-108MC

FOR SERVICE INFORMATION ON RECORD CHANGER UNIT USED IN CONSOLE MODELS - SEE VM MODEL 950 PHOTOFACT SET NO. 107 - FOLDER 13 OR RECORD CHANGER MANUAL CM-3.



DIAL CORD DRIVE

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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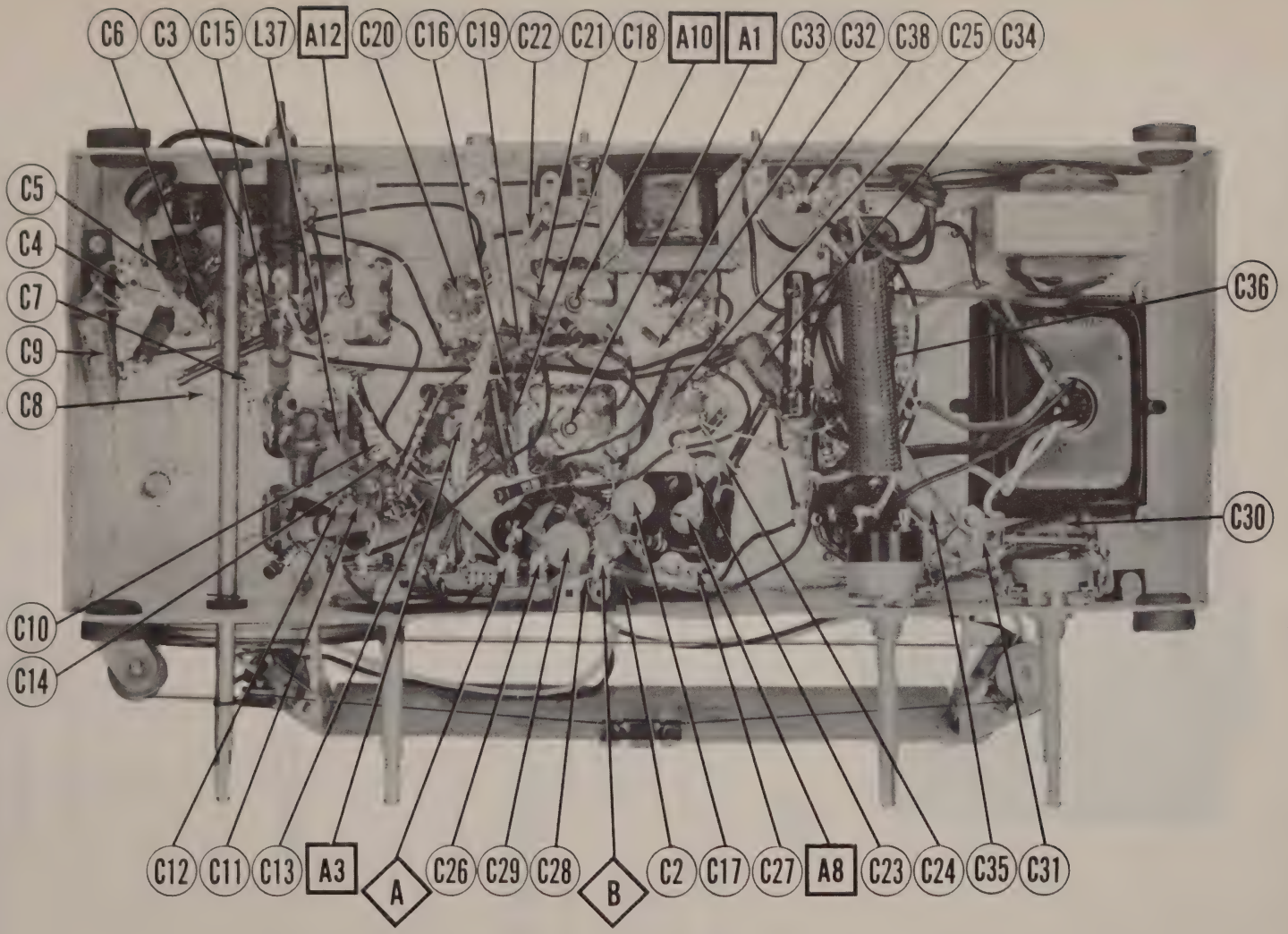
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C15
L37
A12
C20
C16
C19
C22
C21
C18
A10
A1
C33
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C38
C25
C34
C5
C4
C7
C9
C8
C36
C30
C10
C14
C12
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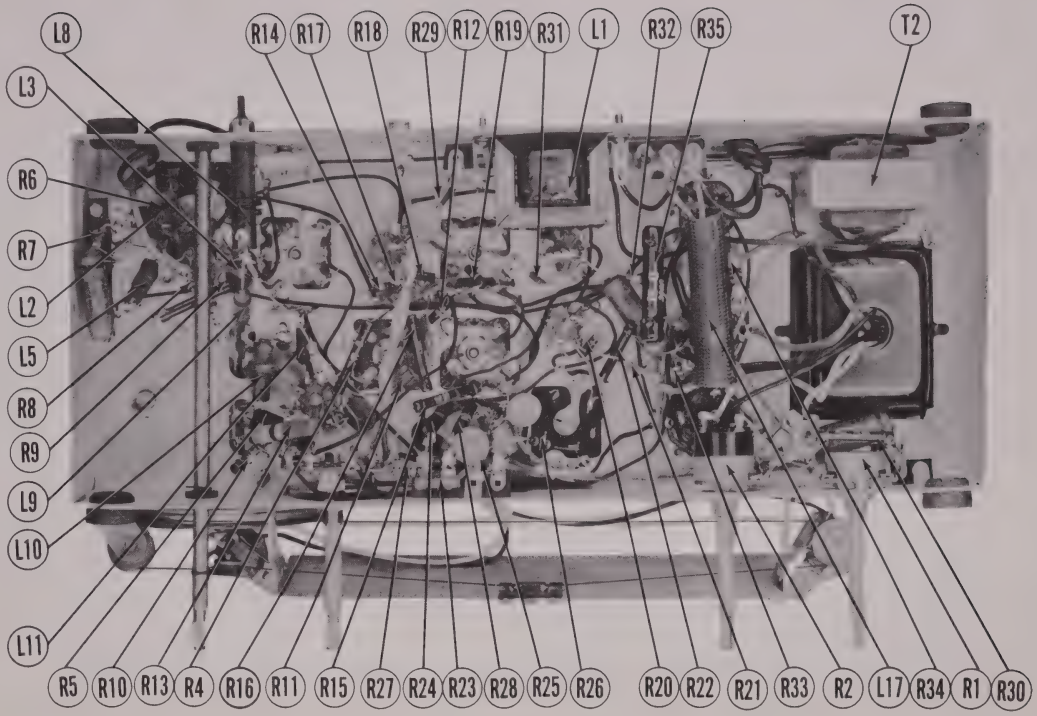
C31


L8
L3
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R16
R11
R15
R27
R24
R23
R28
R25
R26
R20
R22
R21
R33
R2
L17
R34
R1
R30

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning gang fully closed and set pointer to last calibration mark at the left hand end of the dial backplate.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 6BE6 (V2). Low side to chassis.	455KC (400 ∿ Mod.)	AM (center)	Tuning gang fully open.	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1650KC	"	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for max. output.
3.		Loop	1400KC	"	Tune for max. output.	"	A6	"
4.		Loop	600KC	"	Tune for max. output.	"	A7	Repeat steps 3 and 4 until no further improvement can be made.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from Point A to chassis. The junction of these two resistors is alignment Point C as shown the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	.01MFD	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	10.7MC (Unmod.)	FM (CW)	Tuning gang fully open	DC probe to Point (A). Common to chassis.	A8, A9, A10	Adjust for maximum deflection.
6.	"	High side to pin 2 (grid) of 12AT7 (V1). Low side to chassis.	"	"	"	"	A11, A12	"
7.	"	"	"	"	"	DC probe to Point (B). Common to Point (C).	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	.01MFD	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	10.7MC (450KC SWP)	FM (CW)	Point of non-interference	Vert. amp. to Point (A). Low side to chassis.	A8, A9, A10	Disconnect stabilizer capacitor C2. Adjust for maximum amplitude and symmetry as per figure 1.
6.	"	High side to pin 2 (grid) of 12AT7 (V 1). Low side to chassis.	"	"	"	"	A 11, A12	"
7.	"	"	"	"	"	Vert. amp. to Point (B). Low side to chassis.	A13	Reconnect capacitor C2. Adjust A13 so 10.7MC occurs at center of crossover lines as per fig. 2. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	270Ω carbon resistor	High side thru 270Ω to center "FM" antenna terminal, (remove line antenna). Low side to chassis.	108.5MC (Unmod.)	FM	Tuning gang fully open	DC probe to Point (A). Common to chassis.	A14	Adjust for maximum deflection.
9.	"	"	98MC	"	Tune for max. deflection	"	A15	"

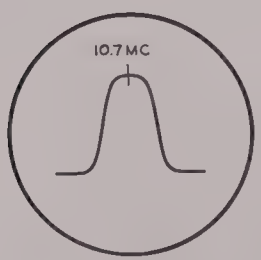


FIG. 1

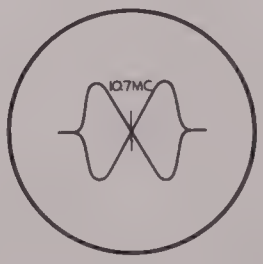
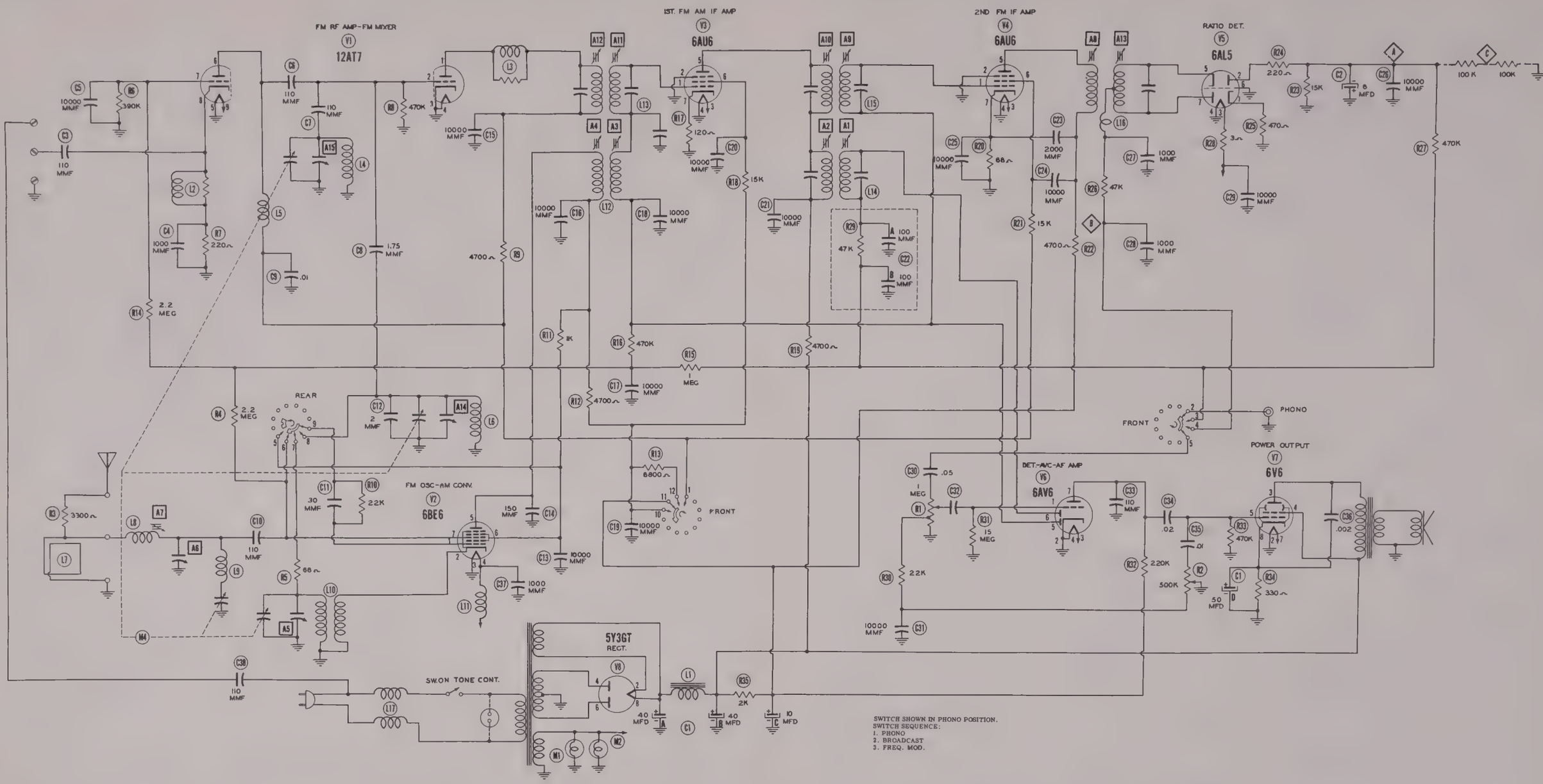


FIG. 2



SWITCH SHOWN IN PHONO POSITION.
SWITCH SEQUENCE:
1. PHONO
2. BROADCAST
3. FREQ. MOD.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AT7	†125VDC	†-.8VDC	0V	0V	0V	†150VDC	† 0V	†1.2VDC	6.3VAC
V 2	6BE6	††-2VDC ▲$-5.2VDC	0V	0V	6.3VAC	110VDC	100VDC	†85VDC ▲-.6VDC		
V 3	6AU6	†0V ▲-.2VDC	0V	6.3VAC	0V	†200VDC ▲225VDC	†125VDC ▲130VDC	.3VDC		
V 4	6AU6	†-.2VDC ▲-.9VDC	0V	6.3VAC	0V	†120VDC ▲230VDC	†105VDC ▲0V	†.7VDC ▲0V		
V 5	6AL5	†0V	†-.3VDC	5.5VAC	0V	†-.1VDC	0V	†-.1VDC		
V 6	6AV6	-.6VDC	0V	6.3VAC	0V	-.7VDC	† 0V ▲-.9VDC	†75VDC ▲95VDC		
V 7	6V6GT	0V	0V	†315VDC ▲240VDC	†230VDC ▲255VDC	0V	†160VDC ▲230VDC	6.3VAC	†12VDC ▲14VDC	
V 8	5Y3GT	0V	†250VDC ▲270VDC	0V	255VAC	0V	255VAC	0V	†250VDC ▲270VDC	

‖ TAKEN WITH VACUUM TUBE VOLTMETER

† TAKEN IN FM POSITION
▲ TAKEN IN AM POSITION

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AT7	††7KΩ ▲ Inf.	470KΩ	0Ω	0Ω	0Ω	††2.3KΩ ▲ Inf.	390KΩ	220Ω	.1Ω
V 2	6BE6	22KΩ	.9Ω	0Ω	.2Ω	††7KΩ ▲†14KΩ	††8KΩ ▲†15KΩ	††8KΩ ▲3.2Meg		
V 3	6AU6	†1.2Meg ▲1.4Meg	0Ω	.1Ω	0Ω	†5KΩ	††17KΩ ▲†24KΩ	120Ω		
V 4	6AU6	†800KΩ ▲950KΩ	0Ω	.1Ω	0Ω	†7KΩ	††17KΩ ▲ Inf.	68Ω		
V 5	6AL5	470Ω	15KΩ	2Ω	0Ω	Inf.	0Ω	Inf.		
V 6	6AV6	15Meg	0Ω	.1Ω	0Ω	††450KΩ ▲470KΩ	†800KΩ ▲950KΩ	†220KΩ		
V 7	6V6GT	0Ω	0Ω	†685Ω	†300Ω	470KΩ	†2.3KΩ	.1Ω	330Ω	
V 8	5Y3GT	0Ω	150KΩ	Inf.	100Ω	Inf.	90Ω	Inf.	150KΩ	

† MEASURED FROM PIN 8 OF V 8

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SPARTON PART No.	STANDARD REPLACEMENT		
V1	FM RF Amp. -FM Mixer	12AT7	12AT7	9A	
V2	FM Osc. -AM Conv.	6BE6	6BE6	7CH	
V3A	1st FM AM IF Amp.	6AU6	6AU6	7BK	
B	1st FM, AM IF Amp	6BA6	6BA6	7BK	
V4A	2nd FM IF Amp.	6AU6	6AU6	7BK	
B	2nd FM IF Amp.	6BA6	6BA6	7BK	
V5	Ratio Det.	6AL5	6AL5	6BT	
V6	Det. -AVC-AF Amp.	6AV6	6AV6	7BT	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	5Y3GT	5Y3GT	5T	

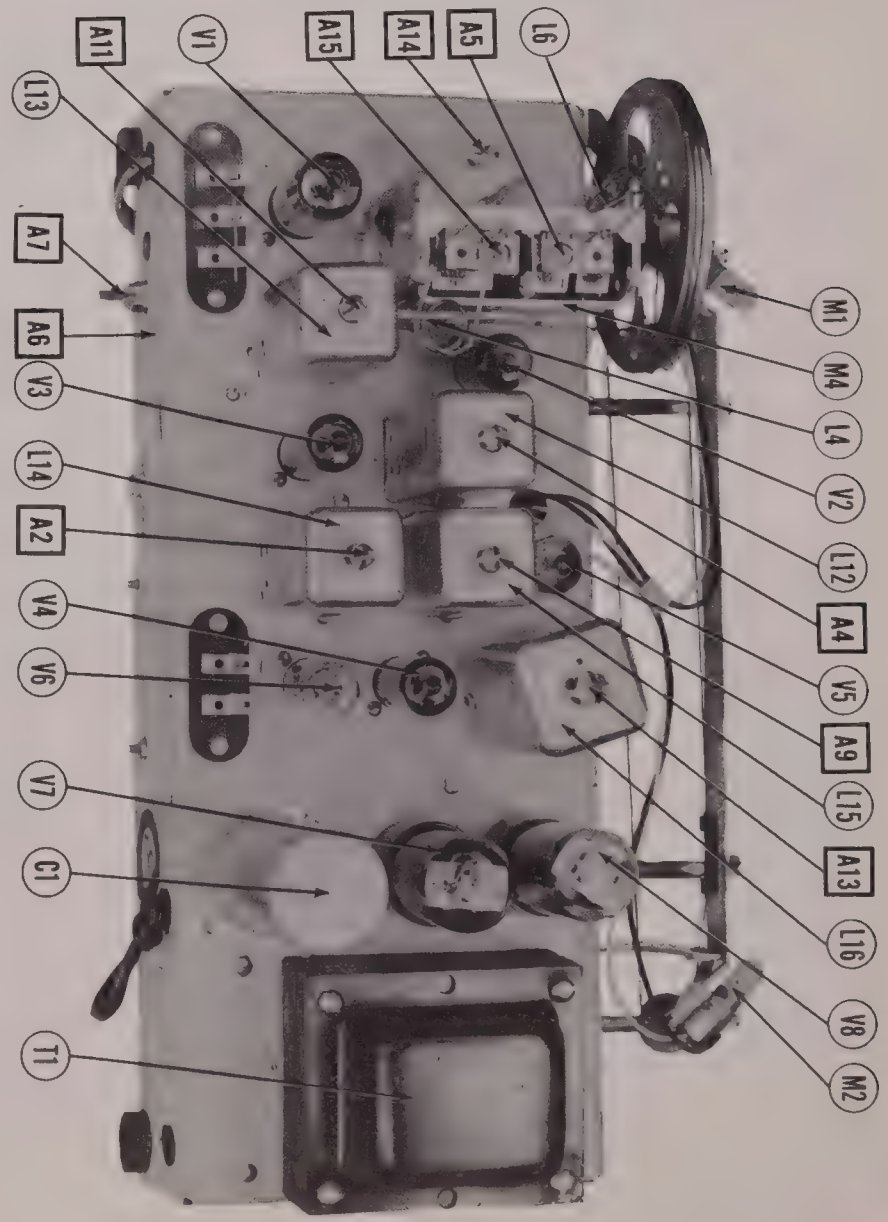
CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA SPARTON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	PA4307-4	AFH862J4A		UP43145C		TVL-4747	■ Filter
B	40	450		PRS50/50		BR255			● Filter
C	10	300							▲ Filter
D	50	50							Output Cathode
C2	8	50	PA4303-7	PRS150/8		BR815		TVA-1405	Stabilizing Cap
C3	110		CC30H-111A	SH100	D6-101	5W5T1	GP1K-100	19C11	RF Coupling
C4	1000		HK35G-102	SH1000	D6-102	1W5D1	GP2L-001	19C1	FM RF Cath.
C5	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	AVC Filter
C6	110		CC30H-111A	SH100	D6-101	5W5T1	GP1K-100	19C11	RF Coupling
C7	110		CC30H-111A	SH100	D6-101	5W5T1	GP1K-100	19C11	RF Coupling
C8	1.75		PA4344-1						Osc. Coupling
C9	.01	400	PC40HL-103	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Decoupling
C10	110		CC30H-111A	SH110	D6-101	5W5T1	GP1K-100	19C11	RF Coupling
C11	30			SH30	D6-300	5W5Q3	GP1K-30	19C8	Osc. Grid Cap
C12	2		CC30H-020K				N750K-2		Fixed Trimmer
C13	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	Osc. Anode Bypass
C14	150		CC30G-151F	SH150NPO	TCN-150	5R5T15	NPOM-150	29C17	Fixed Trimmer
C15	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	FM Mixer Plate Dec.
C16	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	Decoupling
C17	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	AVC Filter
C18	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	AVC Filter
C19	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	Decoupling
C20	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	1st IF Screen
C21	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	1st IF Plate
C22A	100		*PA4329-1	SH100	*PC-50	5W5T1	GP1K-100	19C11	Diode RF Filter
B	100			SH100		5W5T1	GP1K-100	19C11	Diode RF Filter
C23	2000		HK35E-202	SH2000	D6-202	1W5D2	GP2M-002	29C2	2nd IF Plate Dec.
C24	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	2nd IF Screen
C25	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	2nd IF Cathode
C26	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	RF Bypass
C27	1000		HK35G-102	SH1000	D6-102	1W5D1	GP2L-001	19C1	Diode Load Cap
C28	1000		HK35G-102	SH1000	D6-102	1W5D1	GP2L-001	19C1	De-emphasis
C29	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	Filament Bypass
C30	.05	400	PC40GK-503	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C31	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	Tone Comp.
C32	2000		HK35E-202	SH2000	D6-202	1W5D2	GP2M-002	29C2	Audio Coupling
C33	110		CC30H-111A	SH100	D6-101	5W5T1	GP1K-100	19C11	AF Amp. Plate
C34	.02	400	PC40HL-203	P488-02	DF-203	PTE4S2		4TM-S2	Audio Coupling
C35	.01	400	PC40HL-103	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Tone Comp.
C36	.002	1000	PC40GN-202	P1088-002		PTE16D2		MB-D2	Output Plate
C37	10000		PA4334-2	BPD-01	DD-103	PTE4S1	821-01	36C1	Conv. Fil. Bypass
C38	110		CC30H-111A	SH100	D6-101	5W5T1	GP1K-100	19C11	Line Ant. Coupling

* Items C22A, C22B and R29 Are Combined Into One Unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	SPARTON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1Meg	½	PA4408-2	Q13-137X	AK-111	BTSK-72	Volume Control - Tapped ② 160KΩ
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R1A Per Instructions
R2A	500KΩ	½	PA4449	Q13-133	AG-60-Z	BSK-60-S	Tone Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R2A Per Instructions
C	Switch		Not req.	76-2	SWB-2	Not req.	Attach to R2A Per Instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SPARTON PART No.	IRC PART No.	
R3	330Ω	½	BR12S-332	BTS-3300	Antenna Loading
R4	2.2Meg	½	BR12S-225		AM Converter Grid
R5	68Ω	½	BRW12S-680		AM Converter Cathode - Wire Wound
R6	390KΩ	½	BR12S-394		FM RF Amp. Grid - See Note 1
R7	220Ω	½	BR12S-221	BTS-220	FM RF Amp. Cathode
R8	470KΩ	½	BR12S-474		FM Mixer Grid
R9	4700Ω	½	BR12S-472		FM Mixer Decoupling
R10	22KΩ	½	BR12S-223		FM Osc. Grid
R11	1000Ω	½	BR12S-102	BTS-1000	FM Osc. Anode
R12	4700Ω	½	BR12S-472	BTS-4700	Decoupling
R13	6800Ω	2	DR12S-682	BTB-6800	Decoupling
R14	2.2Meg	½	BR12S-225	BTS-2.2Meg	AVC Network
R15	1Meg	½	BR12S-105	BTS-1Meg	AVC Network
R16	470KΩ	½	BR12S-474	BTS-470K	AVC Network
R17	120Ω	½	BR12S-121	BTS-120	1st IF Amp. Cathode - See Note 2
R18	15KΩ	½	BR12S-153		1st IF Amp. Screen
R19	4700Ω	½	BR-12S-472	BTS-4700	1st IF Amp. Plate Decoupling
R20	68Ω	½	BR12S-680		2nd FM IF Amp. Cathode
R21	15KΩ	½	BR12S-153		2nd FM IF Amp. Screen
R22	4700Ω	½	BR12S-472	BTS-4700	2nd FM IF Amp. Plate Decoupling
R23	15KΩ	½	BR12S-153	BTS-15K	Ratio Det. Diode Load
R24	220Ω	1	BR12S-221	BTA-220	Balancing
R25	470Ω	1	BT12S-471	BTA-470	Balancing
R26	47KΩ	½	BR12S-473	BTS-47K	De-emphasis
R27	470KΩ	½	BR12S-474	BTS-470K	AVC Network
R28	3Ω		PA4207-1	BW-½-3	Ratio Det. Diode Filament - Wire Wound
R29	47KΩ		* PA4329-1	BTS-47K	Diode Filter
R30	22KΩ	½	BR12S-223	BTS-22K	Tone Compensation
R31	15Meg	½	BR12S-156	BTS-15Meg	AF Amp. Grid
R32	220KΩ	½	BR12S-224	BTS-220K	AF Amp. Plate
R33	470KΩ	½	BR12S-474	BTS-470K	Output Grid
R34	330Ω	1	CR12S-331	BTA-330	Output Cathode
R35	2000Ω	10	PA4200-10	1 3/4A-2000	Filter - Wire Wound

* Items R29, C22A and C22B Are Combined Into One Unit.

Note 1. Some Models Use 470KΩ Resistor In This Application.

Note 2. Some Models Use 68Ω Resistor In This Application.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	520VCT	5V	6.3V	AB44013-1	PM-8404		
	② .575A	.059ADC	② 2A	② 2.5A				

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	6.5KΩ	4.1Ω	384Ω	.4Ω	AB-44061-2	A-3849	A-3019	R0-201	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V. C. IMP.	SPARTON PART No.	VIKING PART No.	QUAM PART No.	
SP1A	PM	4.1Ω	PC-63000-19 ③	69J9	69A2	③ Used in table models.
B	PM	4.1Ω	PC-63000-12 ④	10J12	10A4A	④ Used in console models.
	CONE DIA.	V. C. DIA.				
SP2A	6 1/8"X 9"	1"				
B	9 1/2"	1"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.059ADC	300Ω	5.9 Henries	AB-47004-1	C-1277 ①	C-2975	R-650	① New mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	SPARTON PART No.	MEISSNER PART No.	
L2	FM Ant. Coil	0Ω		AAG798-3		Wound on 1.5KΩ Resistor
L3	Parasitic Supp.	0Ω		AAG798-7		Wound on 820Ω Resistor
L4	FM RF Coil	0Ω		PA5200-9		
L5	RF Choke	.1Ω		AA6769-2		
L6	FM Osc. Coil	0Ω		PA5200-8		
L7	Loop Antenna	.5Ω		PA5250-5		
L8	Loop Antenna Loading Coil	2.2Ω		AA6616-2		
L9	RF Choke	.1Ω		AA6769-2		
L10	AM Osc. Coil	.9Ω	6Ω	AA6665-3		
L11	Fil. Choke			AA6798-6		
L12	1st AM IF	12Ω	12Ω	AA6668-5		
L13	1st FM IF	.3Ω	.5Ω	AA6667-1		
L14	2nd AM IF	12Ω	12Ω	AA6668-1		
L15	2nd FM IF	.5Ω	.5Ω	AA6667-3		
L16	Ratio Det. Trans.	2Ω	1.2Ω	AA6684-1		
L17	AC Line Choke	.2Ω		AA6664-1		

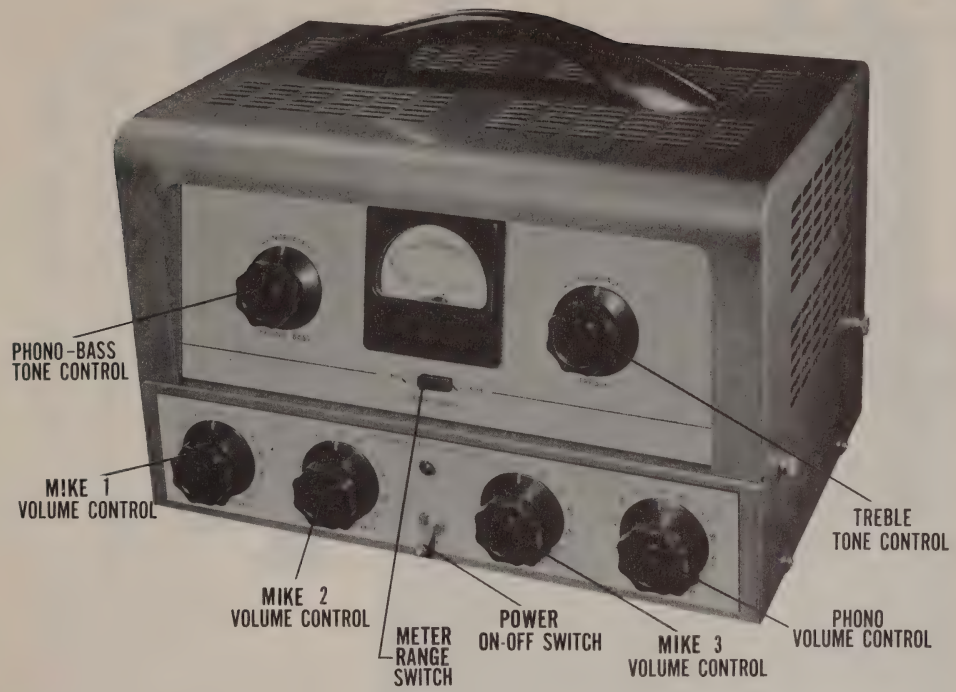
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					SPARTON PART No.		
M1	Bayonet	6-8	.25	Blue			Type #44
M2	Bayonet	6-8	.25	Blue			Type #44

MISCELLANEOUS

ITEM No.	PART NAME	SPARTON PART No.	NOTES
M3	Switch		Function Selector
M4	2 Gang Var. Cap	PC65002-2	(13-484MMF, 30-186MMF)
	Dial Scale	PB30017	

STROMBERG-CARLSON
MODEL AV-38



STROMBERG-CARLSON
MODEL AV-38

STROMBERG-CARLSON MODEL AV-38

TRADE NAME	Stromberg-Carlson, Models AV-38, AV-39
MANUFACTURER	Stromberg-Carlson Co., 100 Carson Road, Rochester 3, New York
TYPE SET	AC Operated Eight Tube Audio Amplifier
TUBES (EIGHT)	Types 6SC7 Mic. #1 - Phono Pre-Amp., 6SC7 Mic. #2 and 3 Pre-Amp., 6SC7 Mic. #1 2nd Pre-Amp., 6SC7 Mic. #2 and 3, 2nd Pre-Amp., 6SC7 1st AF Amp., 6SC7 2nd AF Amp.-Phase Inverter, 6N7 Power Output, 6X5GT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .325 Amp. @ 117 Volts AC

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PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	STROM-CARL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1Meg	½	45746	Q13-137	AM-63-Z	B-70	Phono Bass Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R1A per instructions
R2A	250KΩ	½	45749				Treble control - panel
B	250KΩ	½					Treble control - rear
R3A	250KΩ	½	45745	Q13-130	AM-64-Z	B-51	Mike 1 volume control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R3A per instructions
R4A	250KΩ	½	45745	Q13-130	AM-64-Z	B-51	Mike 2 volume control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R4A per instructions
R5A	250KΩ	½	45745	Q13-130	AM-64-Z	B-51	Mike 3 volume control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R5A per instructions
R6A	250KΩ	½	45748				Phono volume control - panel
B	250KΩ	½					Phono volume control - rear
R7A	5Meg	½	45747	Q11-141	AM-85-S	B-87	Mike bass control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R7A per instructions
R8	100Ω	1	46486	W-100 *	43-100 *	VK-121	Hum control

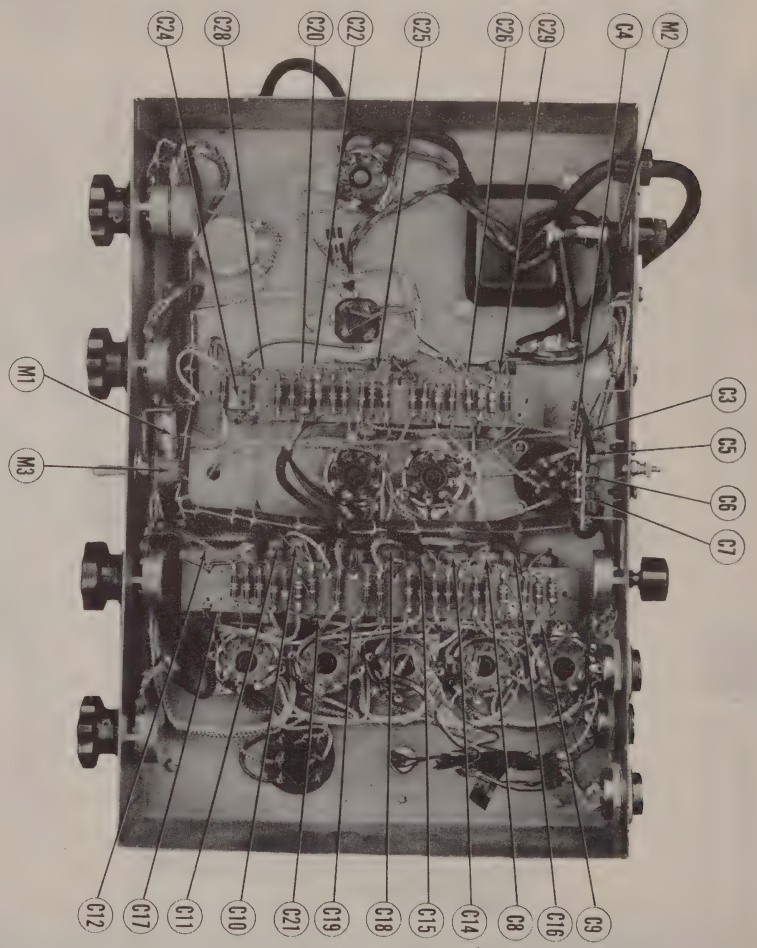
*Fashion shaft to duplicate original.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	STROM-CARL PART No.	IRC PART No.	
R9	470KΩ	½	28187	BTS-470K	1st Mike 1 Pre-Amp. Grid
R10	2200Ω	½	28162	BTS-2200	1st Mike 1 Pre-Amp. Plate
R11	220KΩ	½	28183	BTS-220K	2nd Mike 1 Pre-Amp. Grid
R12	47KΩ	½	28177	BTS-47K	2nd Mike 1 Pre-Amp. Plate
R13	220KΩ	½	28183	BTS-220K	Isolation
R14	470KΩ	½	28187	BTS-470K	1st Mike 2 Pre-Amp. Grid
R15	2200Ω	½	28162	BTS-2200	1st Mike 2 Pre-Amp. Plate
R16	220KΩ	½	28183	BTS-220K	2nd Mike 2 Pre-Amp. Grid
R17	47KΩ	½	28177	BTS-47K	2nd Mike 2 Pre-Amp. Plate
R18	220KΩ	½	28183	BTS-220K	Isolation
R19	470KΩ	½	28187	BTS-470K	1st Mike 3 Pre-Amp. Grid
R20	2200Ω	½	28162	BTS-2200	1st Mike 3 Pre-Amp. Plate
R21	220KΩ	½	28183	BTS-220K	2nd Mike 3 Pre-Amp. Grid
R22	47KΩ	½	28177	BTS-47K	2nd Mike 3 Pre-Amp. Plate
R23	220KΩ	½	28183	BTS-220K	Isolation
R24	100KΩ	½	28006	BTS-100K	Tone Compensation
R25	100KΩ	½	28006	BTS-100K	Tone Compensation
R26	1Meg	½	28191	BTS-1Meg	Tone Compensation
R27	1Meg	½	28191	BTS-1Meg	Tone Compensation
R28	47KΩ	½	28177	BTS-47K	Tone Compensation
R29	1.2Meg	½	28192	BTS-1.2Meg	Tone Compensation
R30	47KΩ	½	28177	BTS-47K	1st Phono Pre-Amp. Plate
R31	47KΩ	½	28177	BTS-47K	2nd Phono Pre-Amp. Plate
R32	22KΩ	½	27407	BTS-22K	Voltage Divider
R33	100KΩ	½	28006	BTS-100K	Tone Compensation
R34	100KΩ	½	28006	BTS-100K	Tone Compensation
R35	47KΩ	½	28177	BTS-47K	Tone Compensation
R36	47KΩ	½	28177	BTS-47K	Tone Compensation
R37	22KΩ	½	27407	BTS-22K	AF Amp. Plate
R38	47KΩ	½	28177	BTS-47K	Tone Compensation
R39	470KΩ	½	28187	BTS-470K	Tone Compensation
R40	22KΩ	½	27407	BTS-22K	AF Amp. Plate
R41	150KΩ	½	27640	BTS-150K	Tone Compensation
R42	120Ω	½	28147	BTS-120	Cathode
R43	220KΩ	½	28183	BTS-220K	Phase Inverter Grid
R44	22KΩ	½	27407	BTS-22K	Phase Inverter Plate
R45	47KΩ	½	28177	BTS-47K	Phase Inverter Plate
R46	6800Ω	½	28168	BTS-6800	Decoup
R47	10KΩ	½	28170	BTS-10K	Phase Inverter Grid
R48	330KΩ	½	28185	BTS-330K	Driver Grid
R49	470KΩ	½	28187	BTS-470K	Driver Grid
R50	1500Ω	½	28160	BTS-1500	Driver Cathode
R51	4.7Meg	½	28199	BTS-4.7Meg	Feedback Network
R52	12KΩ	½	28171	BTS-12K	Meter Multiplier - See Note
R53	10KΩ	½	28170	BTS-10K	Decoup
R54	180KΩ	½	28182	BTS-180K	Voltage Divider
R55	5600Ω	½	28167	BTS-5600	Filter
R56	5600Ω	½	28167	BTS-5600	Filter
R57	3300Ω	2	149049	BTB-3300	Filter
R58	10Ω	½	28134	BW-½-10	Series Pilot Light

NOTE: Not used in Model AV-39.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

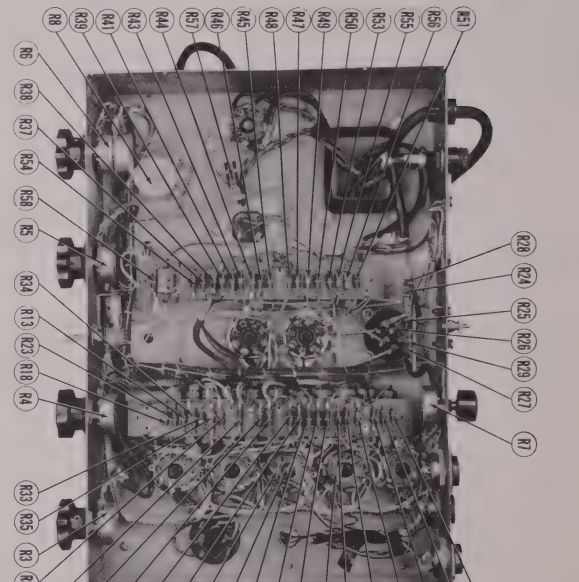
ITEM No.	USE	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	1st Mic. Phono Pre-Amp.	35753	6SC7	8S	
V2	2nd and 3rd Mic. Pre-Amp.	35753	6SC7	8S	
V3	1st Mic. 2nd Pre-Amp.	35753	6SC7	8S	
V4	2nd and 3rd Mic. 2nd Pre-Amp.	35753	6SC7	8S	
V5	1st AF Amp.	35753	6SC7	8S	
V6	2nd AF Amp.-Phase Inv.	35753	6SC7	8S	
V7	Driver	41131	6N7	8B	
V8	Rectifier	162004	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: STROM-CARL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	35590	AFH876H3G		UPT42245		R1004	▲ Filter
B	30	350		10B		C4			■ Filter
C	15	300							▲ Filter
D	50	50							Driver Cath. Bypass
C2A	10	350	45754	AF222J5A		UP1135		R1046	▲ Decoupling
B	10	350		PR26/1500		BR1620			■ Decoupling
C	1400	3							▲ Pre-Amp. Cath. Bypas
C3	100	500	24559	1468-0001	D6-101	5W5T1	GP1K-100	1FM-31	Tone Comp.
C4	200	500	27101	1468-0002	D6-201	5W5T2	GP2K-200	1FM-32	Tone Comp.
C5	100	500	24559	1468-0001	D6-101	5W5T1	GP1K-100	1FM-31	Tone Comp.
C6	400	500	31373	1468-0004	D6-391	5W5T4	GP2K-390	1FM-34	Tone Comp.
C7	400	500	31373	1468-0004	D6-391	5W5T4	GP2K-390	1FM-34	Tone Comp.
C8	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C9	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C10	.02	600	25484	P688-02	DF-203	PTE6S2		6TM-S2	Tone Comp.
C11	.02	600	25484	P688-02	DF-203	PTE6S2		6TM-S2	Tone Comp.
C12	.05	400	40632	P488-05	DF-503	PTE4S5		4TM-S5	Tone Comp.
C13	470	500	110209	1468-0005	D6-471	5W5T5	GP2K-470	1FM-35	Tone Comp.
C14	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C15	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C16	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C17	.01	500	110420	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling
C18	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C19	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C20	.01	500	110420	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling
C21	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C22	50	500	34796	1468-00005	D6-500	5W5Q5	GP1K-50	1FM-45	Tone Comp.
C23	150	500	110205	1468-00015	D6-151	5W5T15	GP2K-150	1FM-315	Tone Comp.
C24	470	500	110209	1468-0005	D6-471	5W5T5	GP2K-470	1FM-35	Tone Comp.
C25	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C26	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C27	150	500	110205	1468-00015	D6-151	5W5T15	GP1K-150	1FM-315	Tone Comp.
C28	1000	500	110210	1467-001	D6-102	1W5D1	GP2L-001	1FM-21	Tone Comp.
C29	.1	400	25483	P488-1	DF-104	PTE4P1		4TM-P1	Tone Comp.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	STROM-CARL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC Ⓐ.325A	620VCT .023ADC	6.3V Ⓐ3.2A		45750	P-6119	P-2951 ①	

① Drill new mounting holes.

TRANSFORMER (INPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	TURNS RATIO		DC RES.		STROM-CARL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	½PRI. TO	SEC.	½PRI.	SEC.					
T2	1:1.8		39Ω	3.0KΩ	45752		A-3039		
T3	1:1.8		39Ω	3.0KΩ	45752		A-3039		
T4	1:1.8		39Ω	3.0KΩ	45752		A-3039		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		STROM-CARL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T4	40KΩ CT	600Ω CT	1.42KΩ CT	21Ω CT	45751		A-3021 ①		① Drill new mounting holes.

DIAL LIGHTS

ITEM No.	BASE-TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					STROM-CARL PART No.		
M1	Bayonet	6-8	.150	Brown	30933		Type #47

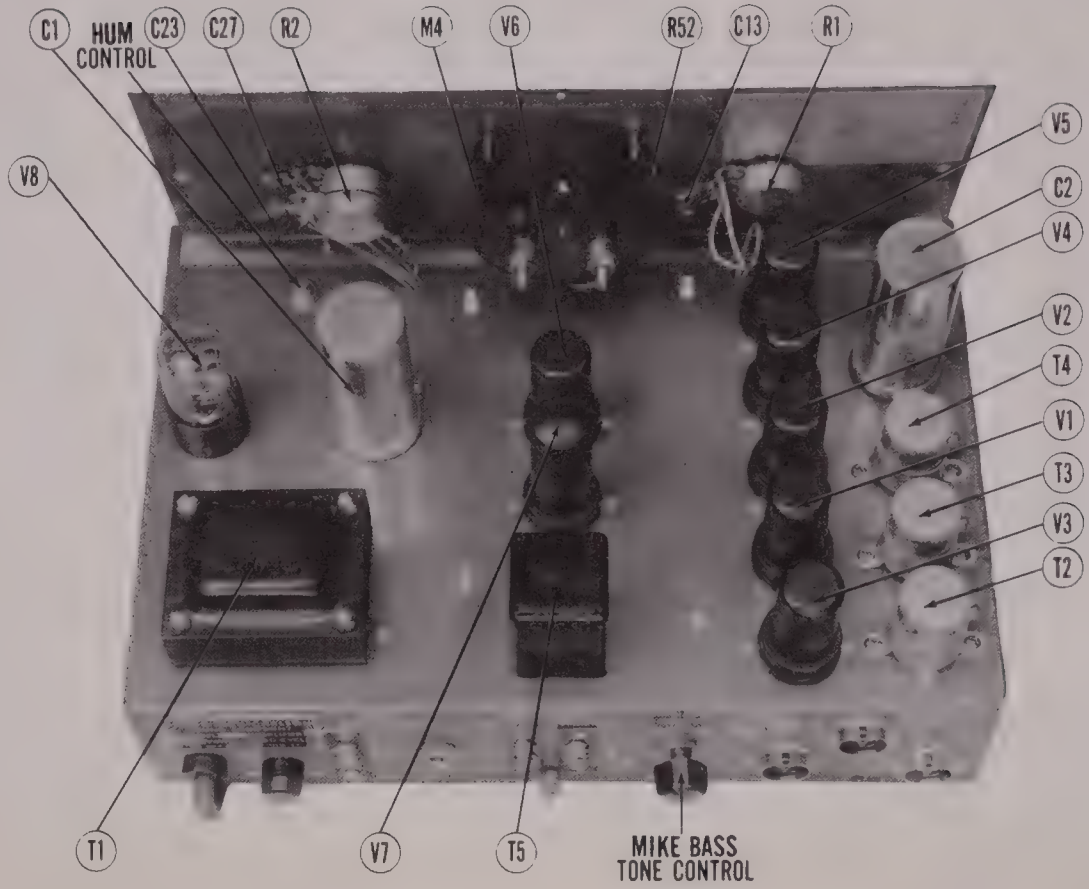
PARTS LIST AND DESCRIPTIONS (Continued)

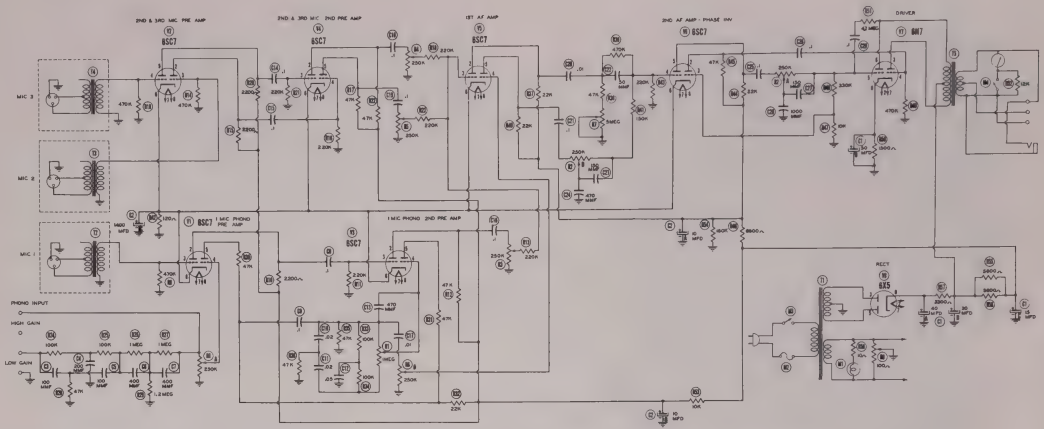
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			STROM-CARL PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M2	3AG	3/4A 250V	22210	27958	312.750	342001	

MISCELLANEOUS

ITEM No.	PART NAME	STROM-CARL PART No.	NOTES
M3	Switch	34694	Power On-Off
M4	Switch	45786	Meter Range
	Meter	43748	Model AV-38 Only


C1
HUM CONTROL
C23
C27
R2
M4
V6
R52
C13
R1
V5
C2
V4
V2
T4
V1
T3
V3
T2
V8
T1
V7
T5
MIKE BASS TONE CONTROL



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	0V	.185VDC	0V	0V	.185VDC	1.65VDC	1	1
V 2	6SC7	0V	.185VDC	0V	0V	.185VDC	1.45VDC	1	1
V 3	6SC7	0V	.167VDC	0V	0V	.215VDC	1.45VDC	1	1
V 4	6SC7	0V	.207VDC	0V	0V	.185VDC	1.45VDC	1	1
V 5	6SC7	0V	.185VDC	0V	0V	.185VDC	1.45VDC	1	1
V 6	6SC7	0V	.140VDC	0V	0V	.140VDC	1.45VDC	1	1
V 7	6X5	0V	0	360VDC	0V	0V	360VDC	0	0 VDC
V 8	6BW7	0V	0	300VAC	0V	300VAC	0V	1	340VDC

1 - 6VAC MEASURED ACROSS FILAMENTS

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	inf.	118KΩ	1KΩ	0Ω	195KΩ	120Ω	6.3Ω	6.3Ω
V 2	6SC7	0Ω	118KΩ	1KΩ	0Ω	118KΩ	120Ω	6.3Ω	6.3Ω
V 3	6SC7	0Ω	110KΩ	120Ω	0Ω	110KΩ	120Ω	6.3Ω	6.3Ω
V 4	6SC7	0Ω	118KΩ	120Ω	47KΩ	195KΩ	120Ω	6.3Ω	6.3Ω
V 5	6SC7	0Ω	118KΩ	120Ω	120Ω	195KΩ	120Ω	6.3Ω	6.3Ω
V 6	6SC7	0Ω	118KΩ	1KΩ	0Ω	110KΩ	120Ω	6.3Ω	6.3Ω
V 7	6X5	inf.	118KΩ	1KΩ	120KΩ	195KΩ	120Ω	6.3Ω	6.3Ω
V 8	6BW7	0Ω	118KΩ	1KΩ	120KΩ	195KΩ	120Ω	6.3Ω	6.3Ω
V 9	6BW7	inf.	6.5Ω	1KΩ	inf.	1KΩ	inf.	6.3Ω	1MΩ

1 - MEASURED FROM PIN 8 OF V8

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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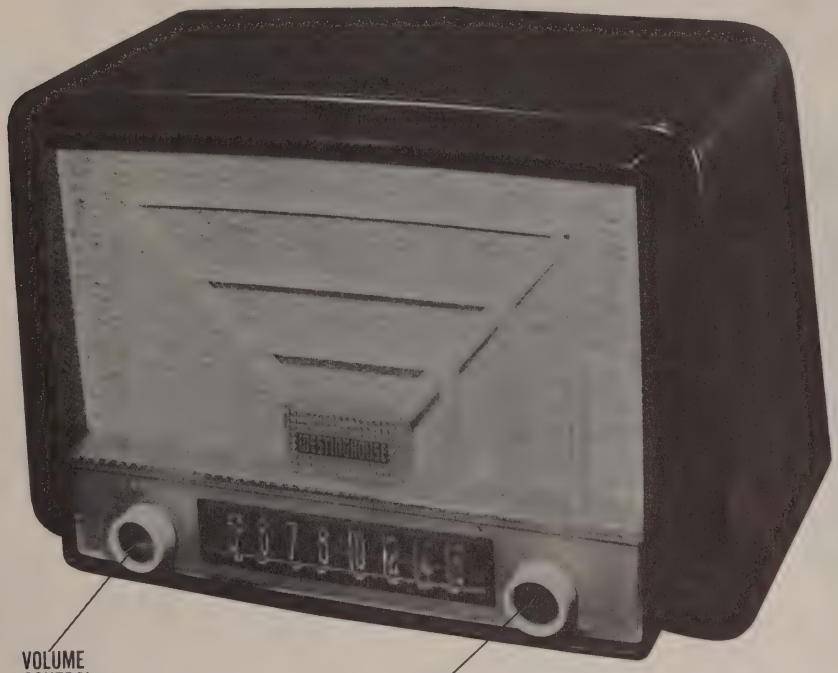
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. All controls at maximum, proper load connected.

WESTINGHOUSE
MODEL H-327T6U (Ch. V-2157-3U)



WESTINGHOUSE
MODEL H-327T6U (Ch. V-2157-3U)

WESTINGHOUSE MODEL H-627T6U

TRADE NAME	Westinghouse, Model H-627T6U (Ch. V-2157-3U)
MANUFACTURER	Westinghouse Electric Corp., Home Radio Div., Sunbury, Pa
TYPE SET	AC-DC Operated Superheterodyne Receiver With Loop Antenna
TUBES (SIX)	Types 14H7 or 12BA6 RF Amp., 12BE6 Converter, 14H7 or 12BA6 IF Amp., 14B6 or 12AV6 Det.-AVC-AF Amp., 35C5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC/DC
RATING	.22 Amp. @ 117 Volts AC
TUNING RANGE	BROADCAST 540-1615KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning gang fully closed and set the left hand edge of the pointer carriage 5/32 inch to the right of the left hand edge of the notch in the chassis.

Use isolation transformer if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.200MMF	High side to pin 7 (grid) of 12BE6 (V2). Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1615KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output.	"	A6, A7	"

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PARTS LIST AND DESCRIPTIONS

WESTINGHOUSE
MODEL H-627T6U

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		Westinghouse PART No.	STANDARD REPLACEMENT		
V1A	RF Amplifier	14H7	14H7	8V	
B	RF Amplifier	12BA6	12BA6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3A	IF Amplifier	14H7	14H7	8V	
B	IF Amplifier	12BA6	12BA6	7BK	
V4A	Det. -AVC-AF Amp.	14B6	14B6	8W	
B	Det. -AVC-AF Amp.	12AV6	12AV6	7BT	
V5	Power Output	35C5	35C5	7CV	
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	Westinghouse PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	50	150	V-10190	AF1010D		UP5515		TVL-2435	■ Filter
B	50	150							▲ Filter
C2	.05	200	RCP10W2503M	P288-05	DF-503	PTE4S5			AVC Filter
C3	.1	400	RCP10W4104M	P488-1	DF-104	PTE4P1		72P52	Line Isolation
C4A	220		V-9634-1	S1220	D6-221	5W5T25	GP2K-220	34C3	Diode RF Filter
B	2000			BPD-002	DD-202	PTE6D2	801-002		Audio Coupling
C	220			S1220	D6-221	5W5T25	GP2K-220		AF Amp. Plate
D	5000			BPD-002	DD-502	PTE6D5	811-005		Audio Coupling
C5	.02	200	RCP10W2203M	P488-02	DF-203	PTE4S2		2TM-S2	Tone Comp.
C6	.01	400	RCP10W4103M	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Output Plate
C7	.05	400	RCP10W4503M	P488-05	DF-503	PTE4S5		4TM-S5	Line Filter

CONTROLS

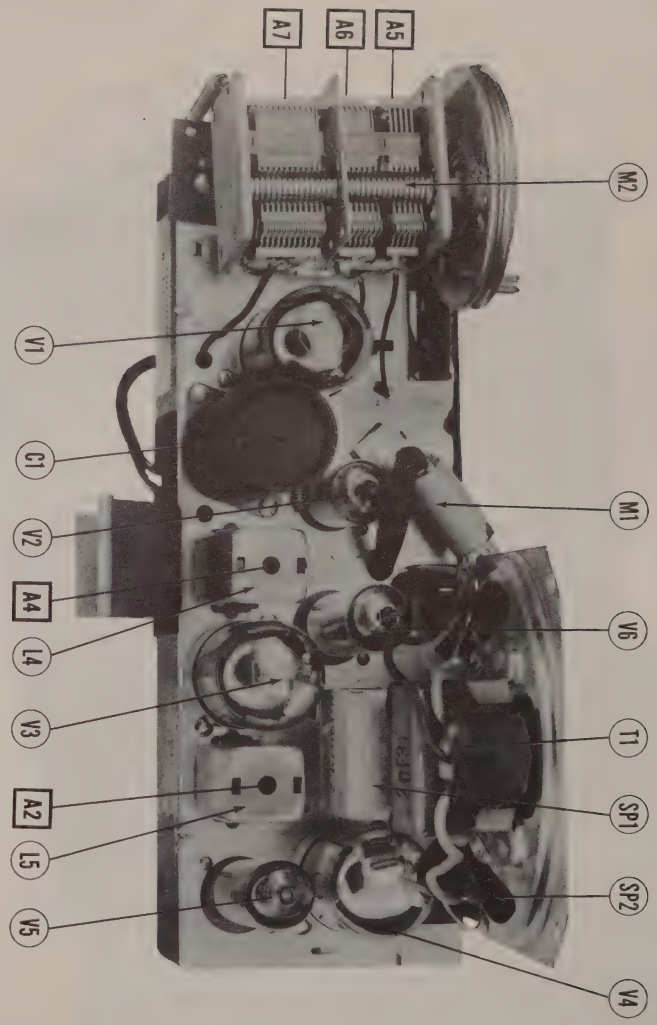
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	Westinghouse PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	500KΩ	½	V-9993-2	QI3-133X	AK-80	BTSK-66-S	Volume Control -Tapped @ 100KΩ
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R1A Per Instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R1A Per Instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	Westinghouse PART No.	IRC PART No.	
R2	680Ω	½	RC20AE681M	BTS-680	RF Amp. Cathode - See Note 1
R3	680Ω	½	RC20AE681M	BTS-680	RF Amp. Cathode - See Note 1
R4	10KΩ	½	RC20AE103M		RF Amp. Plate
R5	22KΩ	½	RC20AE223M		Osc. Grid
R6	68Ω	½	RC20AE680M		IF Amp. Cathode
R7	3.3Meg	½	RC20AE335M	BTS-3.3Meg	AVC Network
R8	10KΩ	½	RC20AE103M	BTS-10K	Tone Compensation
R9	15Meg	½	RC20AE156M	BTS-15Meg	AF Amp. Grid - See Note 2
R10	330KΩ	1	RC30AE334M	BTA-330K	AF Amp. Plate
R11	470KΩ	½	RC20AE474M	BTS-470K	Output Grid
R12	120Ω	½	RC20AE121M	BTS-120	Output Cathode
R13	1000Ω	1	RC20AE102M	BTA-1000	Decoupling

Note 1. Some models use 330Ω resistor in place of R2 and R3.
Note 2. Some models use 10 meg. resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Westinghouse PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.2KΩ Tap 13Ω	4.1Ω	172Ω Tap 8Ω	.8Ω	V-10079-2	A3330 ①	A-3031		① New mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			Westinghouse PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V.C. IMP.		ST-113		
	PM	4.1Ω		MOD. P4-X	4A1	
	CONE DIA.	V.C. DIA				
SP2	3 15/16"	9/16"				

R F COILS

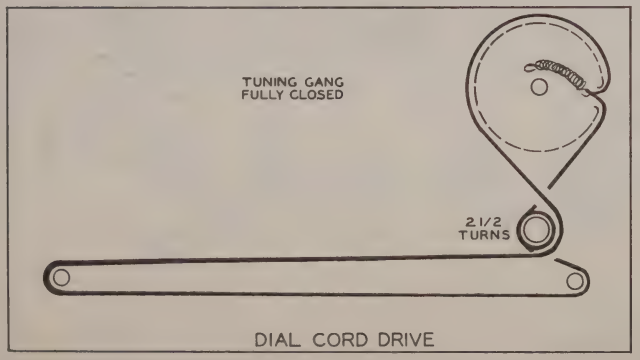
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	Westinghouse PART No.	MEISSNER PART No.
L1	Loop Antenna	3.7Ω		V-10197-1	
L2	RF Coil	3.2Ω	11Ω	V-10191	
L3	Osc. Coil	1Ω	12Ω	V-10192	
L4	1st IF	20Ω	20Ω	V-9735-1	16-6758
L5	2nd IF	20Ω	20Ω	V-9735-1	16-6758

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Westinghouse PART No.		
M1	Bayonet	6-8	.15	Brown	No. 47		Type # 47

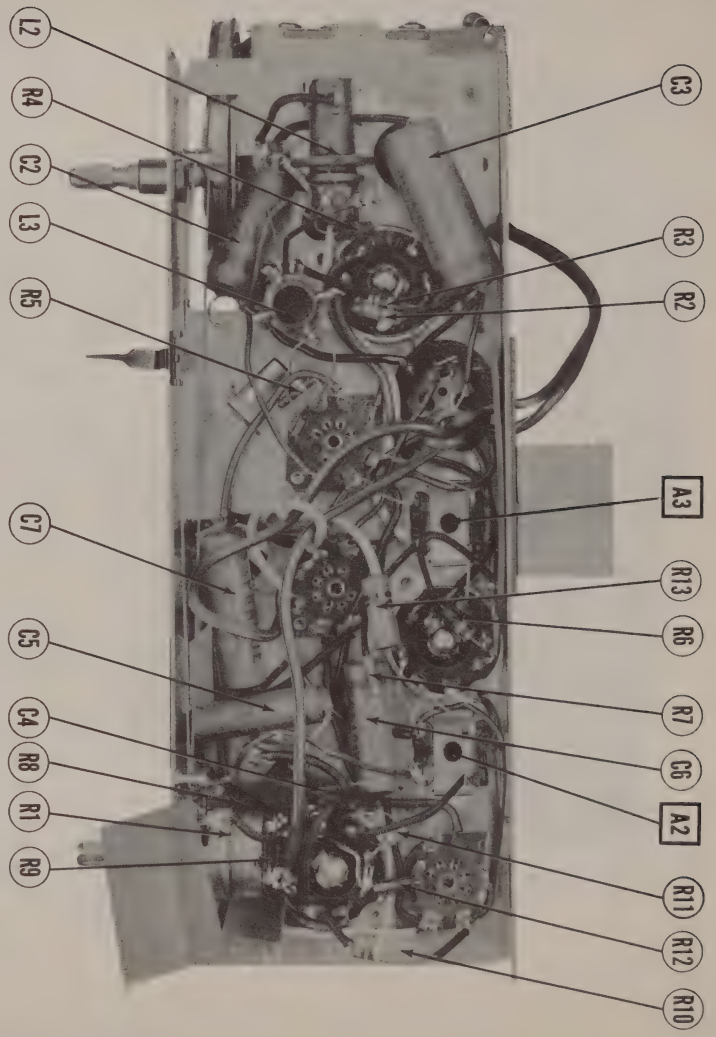
MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M2	3 Gang Var. Cap	V-10189-1	(22-410MMF, 16-244MMF, 18-154MMF)
	Pointer	V-10181-1	
	Cabinet	V-1220-4	
	Knob	V-10009-2	



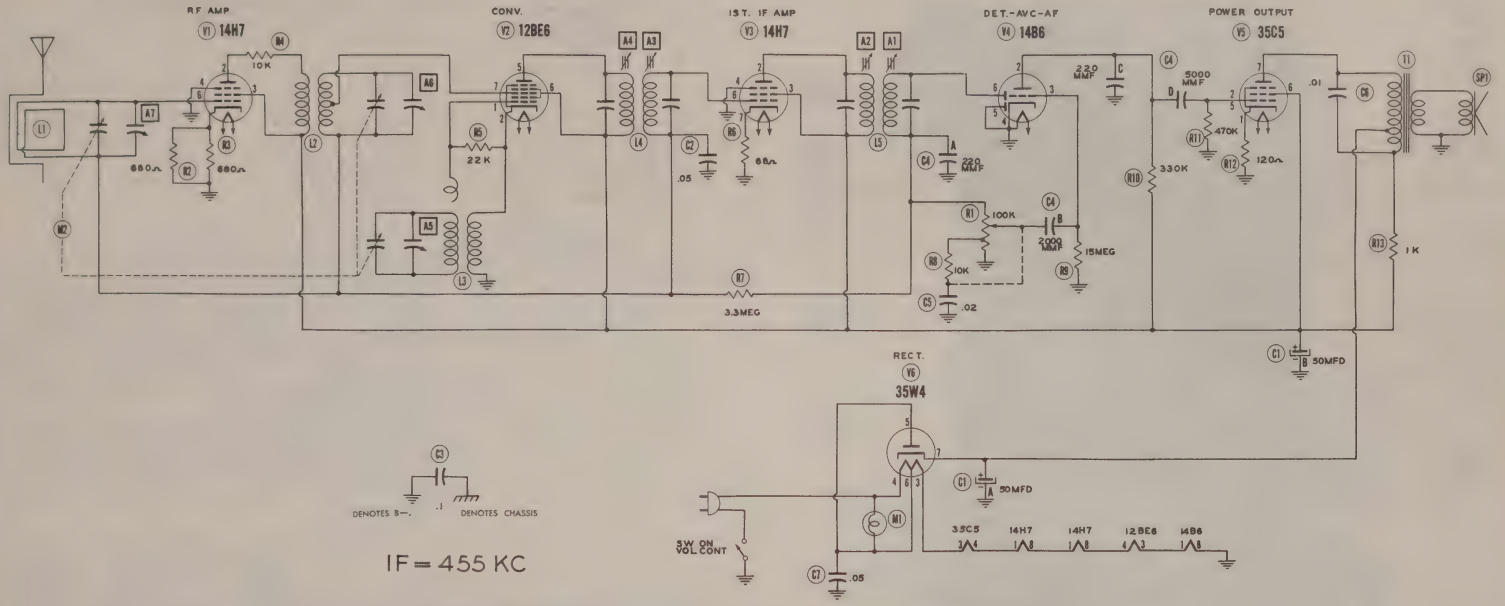
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



WESTINGHOUSE MODEL H-627T6U

WESTINGHOUSE MODEL H-627T6U



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	14H7	25VAC	40VDC	85VDC	0V	0V	-.1VDC	3.2VDC	37VAC
V 2	12BE6	1-7.2VDC	0V	12VAC	25VAC	85VDC	85VDC	-.1VDC	
V 3	14H7	50VAC	85VDC	85VDC	0V	0V	-.1VDC	.6VDC	37VAC
V 4	14B6	12VAC	55VDC	-.5VDC	0V	0V	-.4VDC	0V	0V
V 5	35C5	4.2VDC	0V	83VAC	50VAC	0V	85VDC	105VDC	
V 6	35W4	110VDC	0V	83VAC	117VAC	100VAC	100VAC	112VDC	

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	14H7	25Ω	†11KΩ	†1KΩ	0Ω	0Ω	3.7Meg	340Ω	38Ω
V 2	12BE6	22KΩ	1Ω	13Ω	25Ω	†1KΩ	†1KΩ	3.7Meg	
V 3	14h7	50Ω	†1KΩ	†1KΩ	0Ω	0Ω	3.7Meg	68Ω	38Ω
V 4	14B6	13Ω	†330KΩ	15Meg	0Ω	0Ω	410KΩ	0Ω	0Ω
V 5	35C5	120Ω	470KΩ	90Ω	50Ω	470KΩ	†1KΩ	†165Ω	
V 6	35W4	18Ω	0Ω	90Ω	130Ω	120Ω	120Ω	65KΩ	

VOLUME CONTROL AT MINIMUM FOR RESISTANCE READINGS † MEASURED FROM PIN 7 OF V 6

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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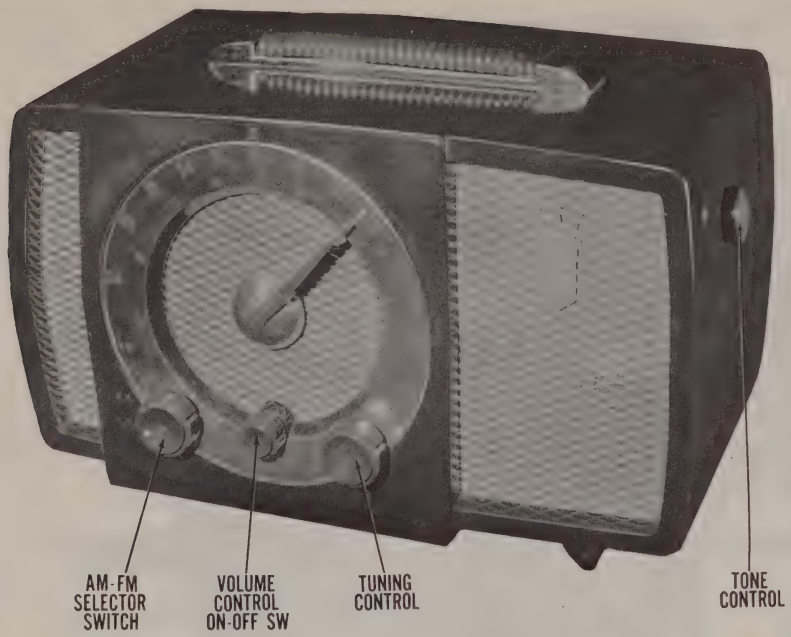
126-14

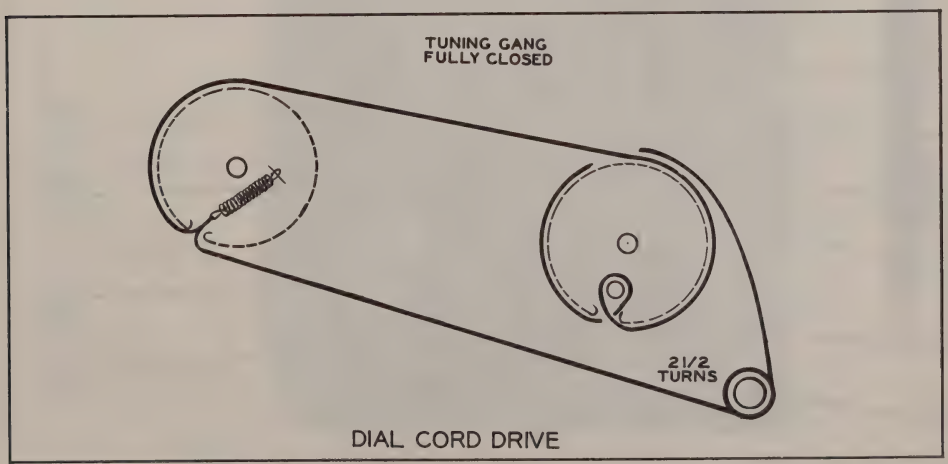
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

ZENITH
MODEL H-724 (Ch. 7H02)



ZENITH MODEL H-724

TRADE NAME	Zenith, Model H-724 (Ch. 7H02)		
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago, Illinois		
TYPE SET	AM-FM Superheterodyne Receiver With Loop Antenna		
TUBES (SEVEN)	Types 12BA6 FM RF Amp., 12AT7 Converter, 12BA6 1st IF Amp., 12BA6 2nd IF Amp., 12AU6 Limiter, 19T8 Discr.-AVC-Det.-AF Amp., 35C5 Power Output		
POWER SUPPLY	110-120 Volts AC/DC	RATING	.30 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1620 KC	FREQ. MOD.	88-108MC



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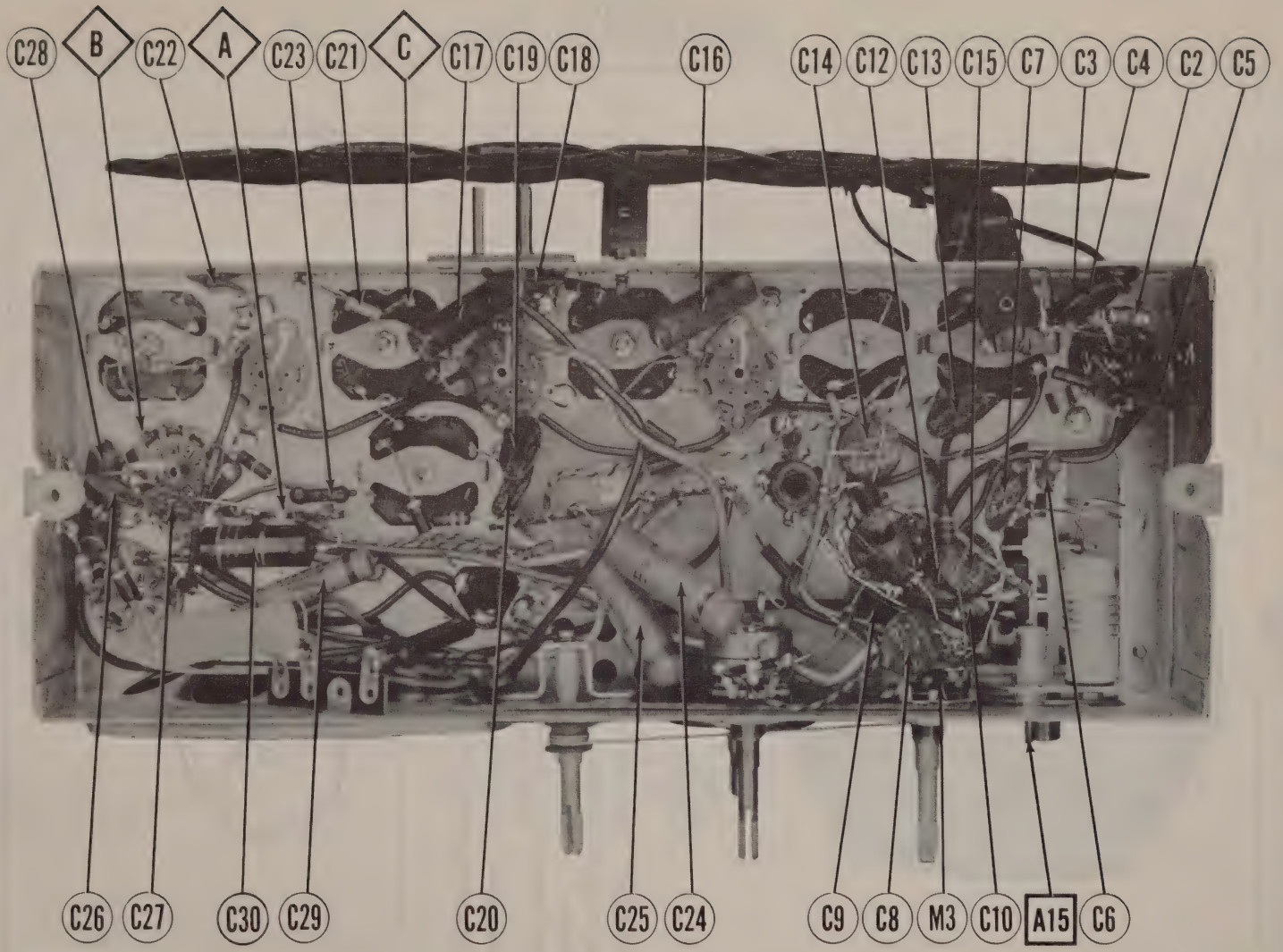
C28
B
C22
A
C23
C21
C
C17
C19
C18
C16
C14
C12
C13
C15
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C3
C4
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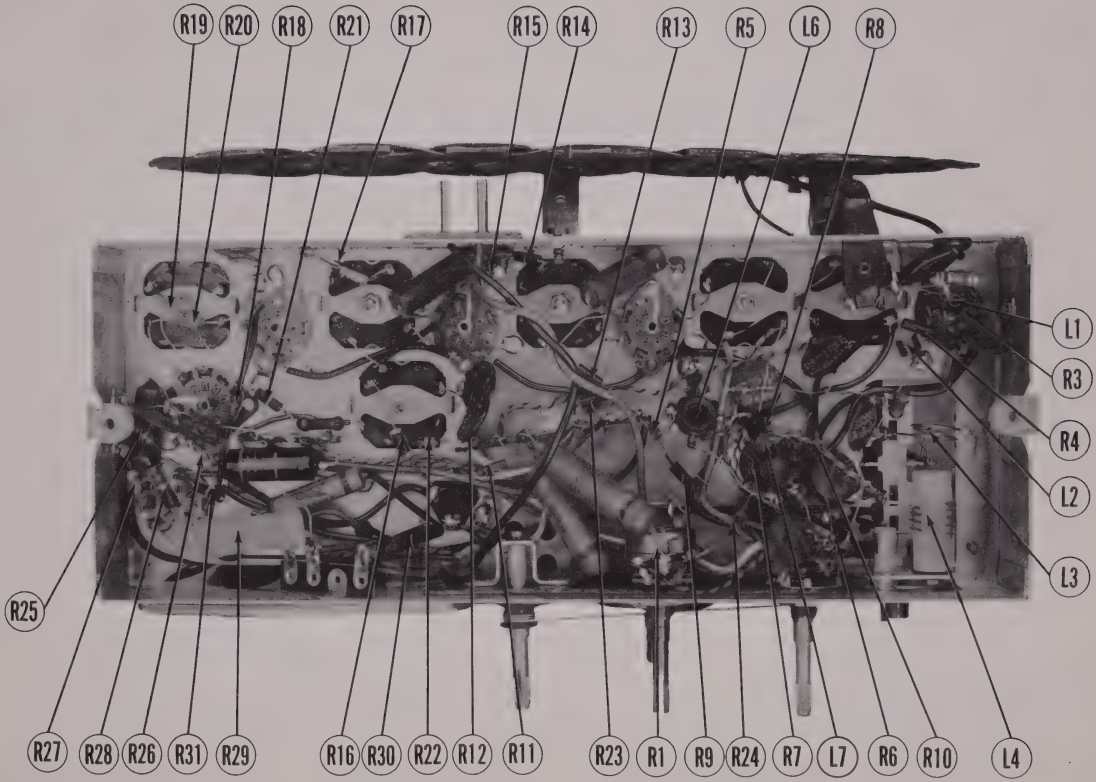
M3
C10
A15
C6


R19
R20
R18
R21
R17
R15
R14
R13
R5
L6
R8
L1
R3
R4
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L3
R25
R27
R28
R26
R31
R29
R16
R30
R22
R12
R11
R23
R1
R9
R24
R7
L7
R6
R10
L4

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning gang fully closed and set pointer to dot at low frequency end of the dial scale.
Use isolation transformer if available. If not, connect a .1MFD capacitor in series with low side of signal generator and chassis.

AM ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to pin 2 (grid) of 12AT7 (V2). Low side to chassis.	455KC (400 ∿ Mod.)	BC (CCW)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4, A5	Adjust for maximum output.
2.		Loop	1620KC	"	"	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for max. output.
3.		Loop	1400KC	"	Tune for max. output.	"	A7	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.05MFD	High side to pin 1 (grid) of 12AU6 (V5). Low side to chassis.	10.7MC (Unmod.)	FM (CW)	Tuning gang fully open	DC probe thru 2 meg to Point (A). Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
5.	"	"	"	"	"	DC probe thru 2 meg to Point (B). Common to chassis.	A9	Adjust for maximum deflection.
6.	"	High side to pin 1 (grid) of 12BA6 (V3). Low side to chassis.	"	"	"	DC probe thru 2 meg to Point (C). Common to chassis.	A10, A11 A12	"
7.	"	High side to pin 2 (grid) of 12BA6 (V2). Low side to chassis.	"	"	"	"	A13, A14	"

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	.05MFD	High side to pin 1 (grid) of 12BA6 (V4). Low side to chassis.	10.7MC (450KC SWP)	FM (CW)	Point of non-interference.	Vert. amp. thru 1 meg to Point (B). Low side to chassis.	A9, A10, A 11	Adjust for maximum amplitude and symmetry as per figure 1.
5.	"	High side to pin 2 (grid) of 12AT7 (V2). Low side to chassis.	"	"	"	Vert. amp. thru 1 meg to Point (C). Low side to chassis.	A12, A13, A14	"
6.	"	"	"	"	"	Vert. amp. to Point (A). Low side to chassis.	A8	Adjust A8 so 10.7MC occurs at center of crossover lines as per figure 2. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines. Continue with step 8.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	270Ω carbon resistor	High side to FM antenna terminal. Remove line antenna. Low side to chassis.	109MC (Unmod.)	FM	Tuning gang fully open.	DC probe thru 1 meg to Point (C). Common to chassis.	A15	Adjust for maximum deflection.
9.	"	"	98MC	"	Tune for max. deflection.	"	A16	"

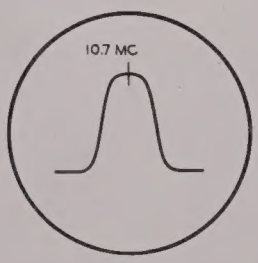


FIG. 1

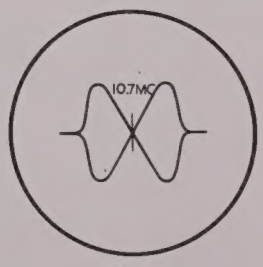
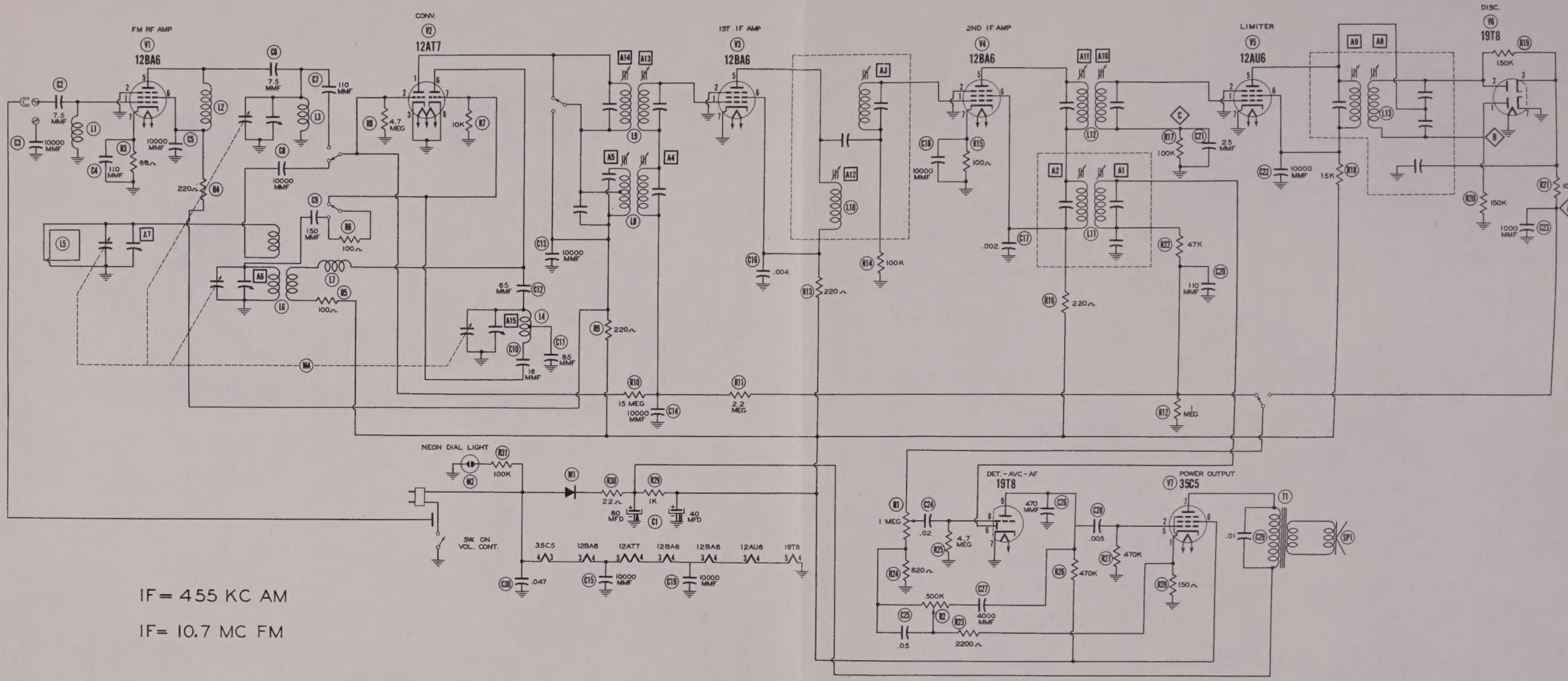


FIG. 2



IF= 455 KC AM

IF= 10.7 MC FM

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12BA6	0V	0V	80VAC	66VAC	78VDC	78VDC	.8VDC		
V 2	12AT7	80VDC	♦-.8VDC ▲-2.5VDC	0V	56VAC	68VAC	80VDC	♦8-7VDC ▲8-4VDC	0V	71VAC
V 3	12BA6	-.4VDC	0V	56VAC	44VAC	80VDC	80VDC	0V		
V 4	12BA6	0V	0V	44VAC	32VAC	80VDC	80VDC	1.1VDC		
V 5	12AU6	-.3VDC	0V	32VAC	20VAC	50VDC	50VDC	0V		
V 6	19T8	-1VDC	-1VDC	-.1VDC	0V	20VAC	-.9VDC	0V	-.9VDC	45VDC
V 7	35C5	4.7VDC	0V	80VAC	117VAC	0V	86VDC	115VDC		

‖ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12BA6	0Ω	0Ω	80Ω	65Ω	†1.4KΩ	†1.4KΩ	68Ω		
V 2	12AT7	†1.2KΩ	♦ 4Meg ▲3.5Meg	0Ω	55Ω	65Ω	†1.1KΩ	10KΩ	0Ω	80Ω
V 3	12BA6	♦ 3Meg ▲ 2.2Meg	0Ω	55Ω	42Ω	†1.2KΩ	†1.2KΩ	0Ω		
V 4	12BA6	100KΩ	0Ω	42Ω	30Ω	†1.2KΩ	†1.2KΩ	100Ω		
V 5	12AU6	100KΩ	0Ω	30Ω	18Ω	†16KΩ	†16KΩ	0Ω		
V 6	19T8	♦140KΩ ▲150KΩ	♦140KΩ ▲150KΩ	♦230KΩ ▲300KΩ	0Ω	18Ω	♦1Meg ▲560KΩ	0Ω	4.7Meg	†470KΩ
V 7	35C5	150Ω	470KΩ	80Ω	115Ω	470KΩ	†1KΩ	†280Ω		

♦ TAKEN IN FM POSITION
▲ TAKEN IN AM POSITION
† MEASURED FROM OUTPUT OF M1

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ZENITH PART No.	IRC PART No.	
R3	68Ω	1/2	63-1737		RF Amp. Cathode
R4	220Ω	1/2	63-1758	BTS-220	RF Amp. Decoup
R5	100Ω	1/2	63-1744		Parasitic Supp
R6	100Ω	1/2	63-1744		Parasitic Supp
R7	10KΩ	1/2	63-1828		Osc. Grid
R8	4.7Meg	1/2	63-1940		Mixer Grid
R9	220Ω	1/2	63-1758	BTS-220	Decoup
R10	15Meg	1/2	63-1961	BTS-15Meg	AVC Network
R11	2.2Meg	1/2	63-1926	BTS-2.2Meg	AVC Network
R12	1Meg	1/2	63-1912	BTS-1Meg	AVC Load
R13	220Ω	1/2	63-1758	BTS-220	1st IF Amp. Decoup
R14	100KΩ	1/2	63-1870		2nd IF Amp. Grid
R15	100Ω	1/2	63-1744	BTS-100	2nd IF Amp. Cathode
R16	220Ω	1/2	63-1758	BTS-220	2nd IF Amp. Decoup
R17	100KΩ	1/2	63-1870	BTS-100K	Limiter Grid
R18	15KΩ	1/2	63-1835	BTS-15K	Limiter Decoup
R19	150KΩ	1/2	63-1876	BTS-150K	Disc. Diode Load
R20	150KΩ	1/2	63-1876	BTS-150K	Disc. Diode Load
R21	100KΩ	1/2	63-1870	BTS-100K	De-emphasis
R22	47KΩ	1/2	63-1856	BTS-47K	Diode Filter
R23	2200Ω	1/2	63-1800	BTS-2200	Tone Compensation
R24	820Ω	1/2	63-1782	BTS-820	Tone Compensation
R25	4.7Meg	1/2	63-1940	BTS-4.7Meg	AF Amp. Grid
R26	470KΩ	1/2	63-1898	BTS-470K	AF Amp. Plate
R27	470KΩ	1/2	63-1898	BTS-470K	Output Grid
R28	150Ω	3	63-686	BW-3-150	Output Cathode - Wire Wound
R29	1000Ω	3	63-1527		Filter - Wire Wound
R30	22Ω	1	63-1450		Surge Limiter - Wire Wound
R31	100KΩ	1/2	63-1870	BTS-100K	Series Pilot Light

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	3KΩ	3.9Ω	260Ω	.5Ω	206C2889	A-3332 ①	A-3019 ①	R0-2 ①	① Bend mounting tabs down, file out slots, and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			ZENITH PART No.	VIKING PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	49-689	525J4	52A1	
	PM	3.9Ω				
	CONE DIA.	V. C. DIA.				
SP2	5 1/8"	9/16"	ZC5091			

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	ZENITH PART No.	MEISSNER PART No.	IRC PART No.	
L1	FM Ant. Coil	0Ω		20-329			
L2	RF Choke	0Ω		20-330			
L3	FM RF Coil	0Ω		20-331			
L4	FM Osc. Coil	0Ω					
L5	Loop Ant.	1.4Ω		S-17364			
L6	AM Osc. Coil	3.6Ω	8Ω	S-17340			
L7	RF Choke	8.2Ω		20-333		CL-1	10 Microhenries
L8	1st AM IF	5Ω	16Ω	95-1250			
L9	1st FM IF	.4Ω	.4Ω	95-1150			
L10	2nd AM-FM IF	25Ω		95-1251			AM Section FM Section
		1.6Ω					
L11	3rd AM IF	22Ω	22Ω	95-1102			
L12	3rd FM IF	.4Ω	.4Ω	95-1150			
L13	Disc. Trans.	.4Ω	.4Ω	95-1153			

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	ZENITH PART No.	SYLVANIA PART No.	SELETRON PART No.	
M1	.070ADC	212-7	NC-5	5M1	

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M2	Dial Light	100-105	Neon (Type NE-51)
M3	Switch	46-859	Function Selector
M4	2 Gang Var. Cap.	22-2255	(17-433MMF, 12-202MMF)
	Dial Scale	26-451	
	Dial Pointer	59-251	